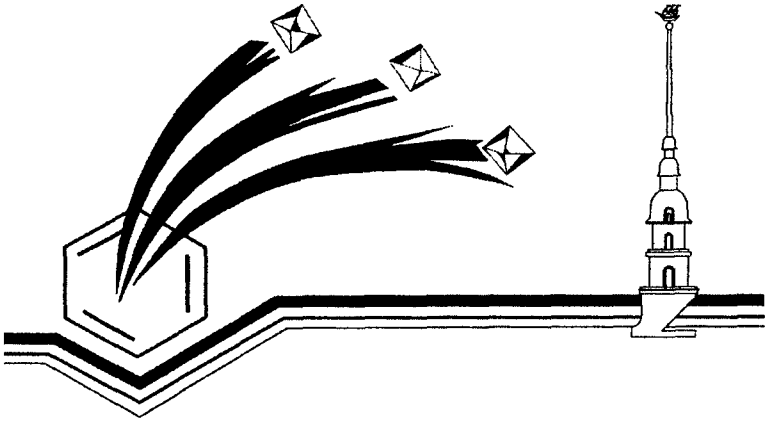
Bibliography Index

Detonation Nanodiamonds and Related Materials



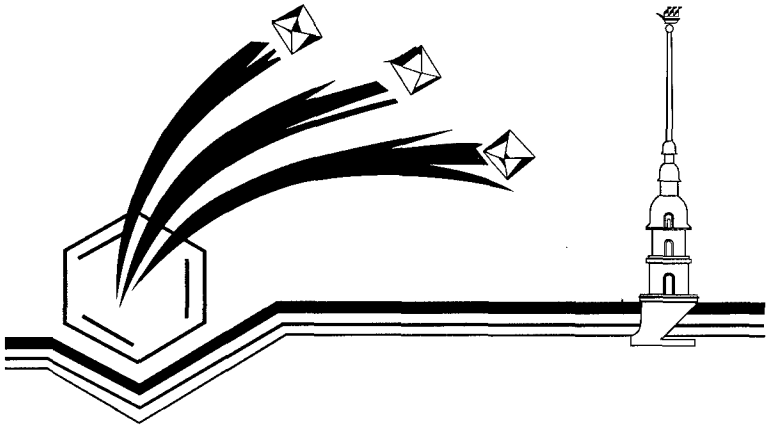
First issue

St.Petersburg 2003

20070504101

Bibliography Index

Detonation Nanodiamonds and Related Materials



First issue

St.Petersburg 2003

APPROVED FOR PUBLIC RELEASE.

GOVERNMENT PURPOSE RIGHTS LICENSE.
The US Government has a non-exclusive license to use these materials for US Government purposes only. All other rights reserved by the copyright holder.

Ioffe Physico-Technical Institute
Centre for Research and Technology "FIZINTEL"

Detonation Nanodiamonds and Related Materials

Bibliography Index

First issue

St.Petersburg, 2003

The Bibliography Index is published in the framework of the First International Symposium "Detonation Nanodiamonds: Technology, Properties and Applications"

ORGANIZERS OF THE SYMPOSIUM

Ioffe Physico-Technical Institute, St.Petersburg, Russia

Institute for Hydrodynamics, Novosibirsk, Russia

St.Petersburg State Institute of Technology (Technical University), St.Petersburg, Russia

Federal State Unitary Enterprise "Electrochimpribor", Russia

Federal State Unitary Enterprise "Special Design and Technological Office "Technolog", St.Petersburg, Russia

Joint Stock Company "Diamond Centre", St.Petersburg, Russia

Centre for Research and Technology "FIZINTEL", St.Petersburg, Russia

SPONSORS OF THE SYMPOSIUM

The Russian Ministry of Industry, Science and Technologies

Federal State Unitary Enterprise "Electrochimpribor", Russia

Office of Naval Research International Field Office

Vision Development Co. Ltd, Tokyo, Japan

WOOIN NANOTECH Co. Ltd., Seoul, South Korea.

This work relates to Department of the Navy Grant N00014-03-1-1070 issued by Office of Naval Research International Field Office. The United States Government has a royalty-free license throughout the world in all copyrightable material contained herein.

ISBN 5-93634-011-2

Scientific Editors: **Alexander Vul'**
Valerii Dolmatov
Olga Shenderova

Design and layout: Larisa Zaytseva

© Centre for Research and Technology "FIZINTEL", St.Petersburg, Russia

Contents

Editorial v

01. General articles on nanodiamonds 1

01.01. Early history (until 1988) 1

01.02. Reviews 3

01.03. Monographs 4

01.04. Proceedings of conferences 4

01.05 Popular science articles 5

02. Synthesis of nanodiamonds 6

02.01. Theory of detonation synthesis of nanodiamonds 6

02.02. Experimental features of detonations synthesis of nanodiamonds 9

02.03. Methods of post-synthesis treatment (purification of nanodiamonds or selection or isolation of nanodiamonds from detonation carbon) 11

02.04. Other means of synthesis of nanodiamonds 12

02.04.01 Shock wave compression of carbon phases 13

02.04.02. Irradiation of carbon species 14

02.04.03. Homogeneous formation in a gas phase 14

02.04.04. Carbide derived (clorination) 15

03. Models for formation of nanodiamonds 16

03.01. Carbon phase diagram at the Nanoscale 16

03.02. Computer simulations of formation of nanodiamonds 16

03.03. Stability of nanodiamonds 17

03.04 Models of nanodiamond formation by other means than detonation synthesis 18

04. Physical properties of nanodiamonds 20

04.01. Structure of nanodiamonds 21

04.02. Mechanical properties 22

04.03 Phase transitions 23

04.04 Optical properties 24

04.05 Electronic properties 25

05. Modification of nanodiamond surface 28

05.01 Properties of nanodiamond surface 28

05.02 Chemical modification of surface 30

05.03 Aggregation (assemblies) of nanodiamonds 31

05.04 Suspension of nanodiamonds 31

05.04.01. Electrophoretic deposition of nanodiamonds 32

06. Experimental methods for investigation of nanodiamonds 33
02.01 X-ray diffraction 33
02.02 Small angle X-ray scattering 33
02.03 Raman scattering 33
02.04 Electron microscopy 34
02.05 Other methods for characterization of nanodiamonds 34

07. Impurities and structural defects in nanodiamonds 36

08. Nanodiamond films by CVD 37

09. Applications of nanodiamonds of detonation synthesis 44
09.01. Nanodiamonds for seeding at CVD diamond films growth 44
09.02. Nanodiamonds for electroplating 44
09.03. Composites based on nanodiamonds 45
09.04. Antifriction coatings from nanodiamonds 50
09.05. Nanodiamonds for polishing 51
09.06. Bioactivity of nanodiamond 52
09.07. Nanodiamonds as adsorbents 53
09.08. Other applications 53

10. Nanographite, carbon onions and other nanodiamond-derived materials 56
10.01. Nanographite and low-dimensional carbon 56
10.02. Carbon onions 58

11. Diamond Nanorods 62

12. Nanodiamonds in Nature 63

13. Inventions and Patents 66

14. Companies and Centers producing nanodiamond of detonation synthesis (websites) 71

15. Scientific groups working in area of detonation nanodiamond (websites or/and e-mail addresses) 73

Source Index 79

Author Index 82

Editorial

The Bibliography Index *'Nanodiamonds and Related Materials'* was prepared for the First International Symposium on *'Detonation Nanodiamonds: Technology, Properties and Applications'*. It seemed important to us to introduce the Symposium participants to most of the recent publications, since the studies in the area of nanotechnologies - nanoelectronics, nanobioengineering and nanomaterials - are gaining greater importance in the modern world. A key position among nanomaterials belongs to nanocarbon clusters, such as fullerenes, nanotubes and carbon onions discovered at the end of the 20th century.

Most of the papers included in the Bibliography are on detonation nanodiamonds. Two papers published in the Russian journal 'Reports of the Academy of Sciences' and in 'Nature' in 1988 are the most widely cited ones, so they are chosen as a zero point for the selection of publications. But we also included a short list of papers published before that date for the sake of historical reference.

To compile the Bibliography, we used our own data base and those of some other researchers: F. Banhart, P. Belobrov, D. Gruen, S.K. Gordeev, G. Galli, G.V. Sakovich, A.P. Voznyakovskii, V.L. Kuznetsov, I.I. Kulakova, whose assistance we would like to acknowledge here. We also used the references in the book *'Detonation Nanodiamonds'* by A.L.Vereschagin.

The publications on each topic are presented in a chronological sequence and in the alphabetic order within each year. One of the difficulties we faced was that many reports are only in Russian, and we could not find an English translation of the particular journals. So we gave only their titles in English with the Latin transcription of both the titles and the authors' names.

The Index is concluded with a list of organizations and research groups involved in nanodiamond technologies, which may promote international cooperation within this community.

The Index compilers are very grateful to the members of the Ioffe Physico-Technical Institute Drs. Vladimir Osipov, Svetlana Vul', and Ph.D student Zoya Tsareva for their invaluable help. We especially appreciate the work on the computer preparation of the Index by Larisa Zaytseva.

Because of the too short period of time allotted for compiling the Bibliography Index, the Editors are aware that it should have certain drawbacks and can hardly satisfy all researchers working on nanodiamonds. But if a second edition becomes necessary in the future, we will appreciate any comments and recommendations for its improvement.

Editors:
Alexander Vul', Valerii Dolmatov, Olga Shenderova.

01. General articles on nanodiamonds

➢ 01.01. Early history (until 1988)

001 Are small diamond thermodynamically stable in the interstellar medium. **Nuth J.A.** *Astrophys. Space Sci.* 1987. Vol. 139, No. 1, P.103-109.

002 Carbon clustering in detonations. **Shaw M.S., Johnson J.D.** *J. Appl. Phys.* 1987. Vol. 62, No. 5, P. 2080-2085.

003 Intersteller diamond in meteorites. **Lewis R.S., Tang M., Wacker J.G., Anders E., Steel E.** *Nature.* 1987. Vol. 326, P. 160-162.

004 Melting of carbon at 50 to 300 kbar. **Weathers M.S., Bassett W.A.** *Phys. Chem. Minerals.* 1987. Vol. 15, P. 105-112.

005 Meteorite diamonds. **Lewis R.S., Ming T., Wacker J.F., Anders E., Steel E.** *Nature.* 1987. Vol. 326, P. 160.

006 Small-particle physics and interstellar diamond. **Nuth J.A. III.** *Nature.* 1987. Vol. 329, P. 589.

007 Theoretical methods and results for electronic structure calculations on very large systems: carbon clusters. **Almlof J., Luthi H.P.** Supercomputer Research in Chemistry and Chemical Engineering, ACS Symposium, ASC, 1987.

008 The temperature of detonation products in the chamber. **Ershov A.P., Kupershtokh A.L.** *Fiz. Goren. Vzryva.* 1986. Vol. 22, No. 3, P. 118-122. (in Russian) // О температуре продуктов детонации при взрыве в камере. **Ершов А.П., Куперштох А.Л.** *Физика горения и взрыва.* 1986. Т. 22, № 3, С. 118-122.

009 A study of detonation transformation of condenced explosives by electroconductivity methods. **Staver A.M., Ershov A.P., Lyamkin A.I.** *Fiz. Goren. Vzryva.* 1984. Vol. 20, No. 3, P. 79-82 (in Russian). // Исследование детонационного превращения конденсированных взрывчатых веществ методом электропроводности. **Ставер А.М., Ершов А.П., Лямкин А.И.** Физика горения и взрыва. 1984. Т. 20, № 3, С. 79-82.

010 On the crystalline structure of detonation diamond. **Kurdyumov A.V., Breusov O.N., Drobishev.V.N., Mel'nikov V.A., Tatsii V.F.** *Fiz. Goren. Vzryva.* 1984.Vol. 25, No. 3, P. 126-128 (in Russian). // О кристаллической структуре алмазов детонационного синтеза. **Курдюмов А.В., Бреусов О.Н., Дробышев В.Н., Мельников В.А., Таций В.Ф.** *Физика горения и взрыва.* 1984. Т. 25, № 3, С. 126-128.

011 Phase diagram of carbon and the possibility of obtaining diamond at low pressures. **Chaikovskii E.F., Rozenberg G.Kh.** *Soviet Physics Doklady.* 1984. Vol. 29, No. 12, P. 1043-1044. // Translation from: *Dokl. Akad. Nauk USSR* 1984. Vol. 279, No. 4-6, P. 1372-1375.

012 Soot derived from the detonation of a trinitrotoluene charge. **Nomura Y., Kawamura K.** *Carbon*.1984.Vol. 22. P. 189-191.

013 Ultradisperse diamond powders produced by explosion. **Staver A.M., Lyamkin A.I., Gubareva N.A., Petrov E.A.** *Fiz. Goren. Vzryva.* 1984. Vol. 20, No. 5. P. 100-103. (in Russian) // Ультрадисперсные алмазные порошки, полученные с использованием энергии взрыва. **Ставер А.М., Лямкин А.И., Губарева Н.А., Петров Е.А.** *Физика горения и взрыва.* 1984. Т. 20, № 5. С. 100-103.

014 Detonation synthesis of superhard materials. **Drobishev V.N.** *Fiz. Goren. Vzryva.* 1983. Vol. 19, No. 5. P. 158-160. (in Russian) // Детонационный синтез сверхтвердых материалов. **Дробышев В.Н.** *Физика горения и взрыва.* 1983. Т. 19, № 5. С. 158-160.

015 Epitaxial diamond growth from methane on ultradisperse diamond produced by high temperature compression. **Tesner P.A., Trefilov V.I., Savvakin G.I., Borodina L.M.** *Dokl. Akad. Nauk USSR.* Vol. 273, No. 6. P. 1431-1432. (in Russian) // Эпитаксиальный рост алмаза из метана на ультрадисперсном алмазе, полученном из газовой фазы при высокотемпературном сжатии. **Теснер П.А., Трефилов В.И., Саввакин Г.И., Бородина Л.М.** *Докл. АН СССР.* 1983. Т. 273, № 6. С. 1431-1432.

016 Production of diamond and boron nitride by internal explosion. **Yamaguchi S.** International Seminar "Superhard materials: synthesis, properties, applications", June 16-21, 1981, Kiev, 1983. P. 55-57 (in Russian). // Получение алмаза и нитрида бора методом внутреннего взрыва. **Ямагучи С.** Международный семинар "Сверхтвердые материалы: синтез, свойства, применение". 16-21 июня 1981, Киев, 1983. С. 55-57.

017 Diamonds produced by detonation. **Adadurov G.A., Breusov O.N., Drobyshev V.N., Rogacheva A.I., Tatsii V.F.** *Fizika Impulsnih Davlenyij.* Tr. 44 (74), M. VNII fiz.-teh. i radiotehn. izmerenii. 1979, No. 4. P. 157-161. (in Russian) // Алмазы, получаемые взрывом. **Ададуров Г.А., Бреусов О.Н., Дробышев В.Н., Рогачева А.И., Таций В.Ф.** *Физика импульсных давлений.* тр. 44 (74) М. ВНИИ физ.-техн. и радиотехнических измерений. 1979. № 4. С. 157-161.

018 The structure of ultradisperse diamond prodused by high-temperature explosion. **Trefilov V.I., Savvakin G.I., Skorohod V.V., Solonin Y.M., Hrienko A.F.** *Dokl. Akad. Nauk USSR.* 1978. Vol. 239, No. 4. P. 838-841. (in Russian) // Особенности структуры ультрадисперсных алмазов, полученных высокотемпературным синтезом в условиях взрыва. **Трефилов В.И., Саввакин Г.И., Скороход В.В., Солонин Ю М. , Хриенко А.Ф.** *Докл. АН СССР.* 1978. Т. 239, № 4. С. 838-841.

019 Electron-spin-resonance spectra of diamonds synthesized in a metal-carbon medium by static and dynamic (explosive) methods. **Andreev V.D., Nachal'naya T.A., Shul'man L.A.** *Soviet Physics - Crystallography.* 1977. Vol. 22, No. 1, P. 113.

020 The electroconductivity band in detonation of condenced explosives. **Antipenko A.G., Dryomin A.N., Yakushev V.V.** *Dokl. Akad. Nauk USSR.* 1975. Vol. 225, No. 5, P. 1086-1088 (in Russian). // О зоне электропроводности при детонации конденсированных взрывчатых веществ. **Антипенко А.Г., Дрёмин А.Н., Якушев В.В.** *Докл. АН СССР.* 1975. Т. 225, № 5, С. 1086-1088.

021 On artificial diamond. **Leypunskiy O.I.** *Usp. Khim.* 1939. Vol. 8, No. 10, P. 1520-1543 (in Russian). // Об искусственных алмазах. **Лейпунский О.И.** *Успехи химии.* 1939. Т. 8, № 10, С. 1520-1534.

➢ 01.02. Reviews

022 Carbon nanostructures. **Shenderova O.A., Zhirnov V.V., Brenner D.W.** *Critic. Rev. Sol. State Mater. Sci.* 2002. Vol. 27, No. 3-4, P. 227-356.

023 Detonation synthesis ultradispersed diamonds: properties and applications. **Dolmatov V.Yu.** *Rus. Chem. Rev.*2001. Vol. 70, No. 7, P. 607-626.

024 Nanodiamonds. **Dolmatov V.Yu., Fujimura T.** *Superhard Materials.* 2001. No. 6. P. 31-37. // Наноалмазы. **Долматов В.Ю., Фуджимура Т.** *Сверхтвердые материалы.* 2001. № 6. С. 34-41.

025 Nanocrystalline diamond films. **Gruen D.M.** *Annu. Rev. Mater. Sci.* 1999. Vol. 29, P. 211-259.

026 Detonation and shock synthesis of nanodiamonds. **Donnet J.-B., Lemoigne C., Wang T.K., Peng C.-M., Samirant M., Eckhardt A.** *Bull. Soc. Chem. Fr.* 1997. Vol. 134, No. 10-11, P. 875-890.

027 New type of artificial diamonds and physical-chemical fundumentals of their creation. **Sakovich G.V, Petrov E.A., Komarov V.F., Kozyrev N.V.** Conversion Concepts for Commercial Applications and Disposal Technologies of Energetic Systems. NATO ASI Series, **Ed. Krause H.** Amsterdam, Kluwer Academic Publ., 1997. P. 55-72.

028 Chemical diamond synthesis. Aspects of general theory. **Rudenko A.P., Kulakova I.I., Skvortsova V.L.** *Rus. Chem. Rev.* 1993. Vol. 62, No. 2, P. 87.

029 Production of ultradisperse diamond from explosives. **Staver A.M., Lyamkin A.I.** Ultradisperse materials: synthesis and properties, Krasnoyarsk, 1990. P. 3-22 (in Russian). // Получение ультрадисперсных алмазов из взрывчатых веществ. **Ставер А.М., Лямкин А.И.** Ультрадисперсные материалы. Получение и свойства. Красноярск: 1990. С. 3-22.

030 Progress in the physics and chemistry of energy-saturable media. **Tananaev I.V., Fedorov V.B., Kalashnikov E.G.** *Usp. Khim.* 1987. Vol. 56, No 2, P. 193-215 (in Russian). // Успехи физико-химии энергонасыщенных сред. **Тананаев И.В., Федоров В.Б., Калашников Е.Г.** *Успехи химии.* 1987. Т. 56, № 2, С. 193-215.

See also **074**

➢ 01.03. Monographs

031 Ultradisperse diamonds of detonation synthesis: production, properties and applications. **Dolmatov V.Yu.** Publisher: St. Petersburg, Politechnical university. 2003.

032 Detonation nanodiamonds. **Vereshchagin A.L.** Altai State Technical University, Barnaul, Russian Federation, 2001 (in Russian). // Детонационные наноалмазы. **Верещагин А.Л.** Барнаул, 2001 г. Издательство Алтайского государственного технического университета ISBN 5-9257-0012-0.

033 Nanostructured carbon for advanced applications. Eds.: Benedek G., Milani P., Ralchenko V.G. NATO Science Series Vol. 24. Kluwer Academic Publ., 2001.

034 New carbons. **Inagaki M.** Elsevier: 2000.

035 Carbyne and carbynoid structures. Ed. by Heimann R.B., Evsyukov S.E., Kavan L. Kluwer Academic Publ., 1999.

036 The physics and chemistry of ultradisperse systems. Ed. Morohov I.D. Moscow: Nauka, 1987. 342 p. // Физико-химия ультрадисперсных систем. под ред. Морохова И.Д. М.: Наука, 1987. 342 с.

037 Clusters and small particles. **Petrov Y.I.** Moscow: Nauka, 1986. 368 p. // Кластеры и малые частицы. **Петров Ю.И.** М.: Наука, 1986. 368 с.

038 Physical phenomena in ultradisperse media. **Morohov I.D., Trusov L.I., Lapovok V.N.** Moscow: Energyatomizdat, 1984. 224 p. // Физические явления в ультрадисперсных средах. **Морохов И.Д., Трусов Л.И., Лаповок В.Н.** М.: Энергоатомиздат, 1984. 224 с.

➢ 01.04. Proceedings of conferences

039 The Proceedings of the 5th All-Russian Conference "The Physics and Chemistry of Ultradisperse System", Moscow, Moscow Physical-Engineering Institute, 2000. (in Russian). // Сборник научных трудов 5-ой Всероссийской конференции по физикохимии ультрадисперсных систем. Москва, МИФИ, 2000.

040 The Proceedings of the 4th All-Russian Conference "The Physics and Chemistry of Ultradisperse System", Moscow, Moscow Physical-Engineering Institute, 1999 (in Russian). // Сборник научных трудов 4-ой Всероссийской конференции по физикохимии ультрадисперсных систем. Москва, МИФИ, 1999.

041 The Proceedings of a Seminar on Nanosize Diamonds. Institute for Superhard Materials. *Superhard Materials.* 1998. No. 4, P. 3-95. // Труды научного семинара Института сверхтвердых материалов по нанометрическим алмазам. *Сверхтвердые материалы.* 1998. № 4, С. 3-95.

042 Collection of Reports of the 5th All-Union Meeting on Detonation. Krasnoyarsk, State Technical University, Russia, August 5-12, 1991 (in Russian). // Сборник докладов 5-ого Всесоюзного совещания по детонации. Красноярск, 5-12 августа 1991 года, в двух томах, 379 с.

See also **096, 189, 213, 230, 262, 407, 410, 411, 417, 456, 491, 572**

➢ 01.05 Popular science articles

043 Three dialogs in "Karpovka", *Chemistry and Life.* 1999. No. 1, P. 14-16 (in Russian). // Три беседы в "Карповке" *Химия и жизнь.* 1999. № 1, P. 14-16. (about work of Koscheev A. on nanodiamond).

044 Turning onions into diamonds. **Schewe P.F., Stein B.** *Bull. Phys. News.* 1997. Vol. 340, P. 173-180.

See also **024, 481, 586, 591, 598**

0.2. Synthesis of nanodiamonds

045 Synthesis, properties, application, and production of nanometric diamonds. Part 1. Synthesis and properties. **Sakovich G.V., Komarov V.F., Petrov E.A.** *Superhard Materials.* 2002. No. 3, P. 1-15. // Синтез, свойства, применение и производство наноразмерных синтетических алмазов. Часть 1. Синтез и свойства **Сакович Г.В., Комаров В.Ф., Петров Е.А.** *Сверхтвердые материалы.* 2002. № 3, С. 3-18.

046 Synthesis, properties, application, and production of nanometric diamonds. Part 2. Application and production. **Sakovich G.V., Komarov V.F., Petrov E.A.** *Superhard Materials.* 2002. No. 4, P. 7-21. // Синтез, свойства, применение и производство наноразмерных синтетических алмазов. Часть 2. Применение и производство. **Сакович Г.В., Комаров В.Ф., Петров Е.А.** *Сверхтвердые материалы.* 2002. № 4, С. 8-23.

➢ 02.01. Theory of detonation synthesis of nanodiamonds

047 Carbon cluster coagulation and fragmentation kinetics in shocked hydrocarbons. **Viecelli A., Glosli J.N.** *J. Chem. Phys.* 2002. Vol. 117, P. 11352-11358

048 Liquid-liquid phase transition in elemental carbon: a first-principles investigation. **Wu C.J., Glosli J., Galli G., Ree F.** *Phys. Rev. Lett.* 2002. Vol. 89, P. 135701.

049 Phase transformations of nanometer size carbon particles in shocked hydrocarbons and explosives. **Viecelli J.A., Bastea S., Glosli J.N., Ree F.H.** *J. Chem. Phys.* 2001. Vol. 115, P. 2730-2736.

050 Carbon particle phase transformation kinetics in detonation waves. **Viecelli J., Ree F.H.** *J. Appl. Phys.* 2000. Vol. 88. P. 683-690.

051 Mathematical modeling of the synthesis of superhard materials by detonation waves. **Molokeev V.A., Titarenko Y.I.** Issledovaniya po ballistike i smezhnym voprosam. Tomsk: 1997. P. 95-99. // Использование математического моделирования в задачах синтеза сверхтвердых материалов в детонационной волне. **Молокеев В.А., Титаренко Ю.И.** Исследования по баллистике и смежным вопросам. Томск: 1997. С. 95-99.

052 On the mechanism of ultradisperse diamond detonation synthesis and the ambient dependence of its yield. **Babyshkin Y.A., Lyamkin A.I., Chiganova V.A.** Ul'tradispersnye poroshki, nanostruktury, materialy. Krasnoyarsk: Izd. KGTU. 1996. P. 10-15. (in Russian). // О механизме образования ультрадисперсного алмаза при детонационном синтезе и зависимости его выхода от внешних условий. **Бабушкин Ю.А., Лямкин А.И., Чиганова В.А.** Ультрадисперсные порошки, наноструктуры, материалы. Красноярск: Изд. КГТУ, 1996. С. 10-15.

053 Formation time estimation of the corresponding carbon liquid droplets of ultrafine diamond. **Zhou G., Jun S., Huang F., Ding J.** HDPIV: 4th Symp. Int. Comport Mileux denses hautes pressions dyn., Tours, 5-9 Juin 1995. Paris. 1995. P. 319-325.

054 The temperature effect on the growth of ultradisperse diamonds at the detonation wave front. **Anisichkin V.F., Dolgushin D.S., Petrov E.A.** *Fiz. Goren. Vzryva.* 1995. Vol. 31, No. 1, C. 109-112. (in Russian) // Влияние температуры на процесс роста ультрадисперсных алмазов во фронте детонационной волны. **Анисичкин В.Ф., Долгушин Д.С., Петров Е.А.** *Физика горения и взрыва.* 1995. Т. 31, № 1, С. 109-112.

055 On the mechanism of carbon release in the detonation decomposition of substances. **Anisichkin V.F.** *Fiz. Goren. Vzryva.* 1994. Vol. 30, No. 5, C. 100-106. (in Russian) // О механизме выделения углерода при детонационном разложении веществ. **Анисичкин В.Ф.** *Физика горения и взрыва.* 1994. Т. 30, No. 5, С. 100-106.

056 The effect of the explosive molecule structure on the production rate, output and properties ultradispersed diamond. **Pershin S.V., Petrov E.A., Tsaplin D.N.** *Fiz. Goren. Vzryva.* 1994. Vol. 30, No. 2, P. 102-106. // Влияние структуры молекулы взрывчатых веществ на скорость образования, выход и свойства ультрадисперсных алмазов. **Першин С.В., Петров Е.А., Цаплин Д.Н.** *Физика горения и взрыва.* 1994. Т. 30. № 2, С. 102-106.

057 Very small spherical crystals of distorted diamond found in detonation product of explosive/graphite mixture and their formation mechanism. **Yamada K., Sawaoka A.B.** *Carbon.* 1994. Vol. 32, No. 4, P. 665-673.

058 Diamond formation from liquid carbon. **Mal'kov I.Y., Filatov L.I., Titov V.M., Litvinov B.V., Chuvilin A.L., Teslenko A.S.** *Fiz. Goren. Vzryva.* 1993. Vol. 27, No. 2, P. 131-134 (in Russian). // Образование алмаза из жидкой фазы углерода. **Мальков И.Ю., Филатов Л.И., Титов В.М., Литвинов Б.В., Чувилин А.Л., Тесленко А.С.** *Физика горения и взрыва.* 1993. Т. 27, № 2, С. 131-134.

059 Formation of diamond from liquid carbon. **Mal'kov I.Y., Filatov L.I., Titov V.M. et al.** *Fiz. Goren. Vzryva.* 1993. Vol. 29, No. 4, P. 131-134 (in Russian).

060 Diamond melting and liquid carbon. **Galli G.** *Phys. Scripta.* 1992. Vol. 39, P. 148.

061 The influence of scale factors on the size and yield of diamond in detonation synthesis. **Vyskubenko B.A., Danilenko V.V., Lin E.E., Mazanov V.A., Serova T.V., Suharenko V.I., Tolochko A.P.** *Fiz. Goren. Vzryva.* 1992. Vol. 28, No. 2, P.108-109 (in Russian). // Влияние масштабных факторов на размеры и выход алмазов при детонационном синтезе. **Выскубенко Б.А., Даниленко В.В., Лин Э.Э., Мазанов В.А., Серова Т.В., Сухаренко В.И., Толочко А.П.** *Физика горения и взрыва.* 1992. Т. 28, No. 2, С. 08-109.

062 On diamond formation in detonation of picric acid. **Pershin S.V., Tsaplin D.N., Dryomin A.N., Antipenko A.G.** *Fiz. Goren. Vzryva.* 1991. Vol. 27, No. 4, P. 117-121 (in Russian). // О возможности образования алмаза при детонации пикриновой кислоты. **Першин С.В., Цаплин Д.Н., Дремин А.Н., Антипенко А.Г.** Физика горения и взрыва. 1991. Т. 27, № 4, С. 117-121.

063 Diamond synthesis from detonation carbon. **Volkov K.V., Danilenko V.V., Elin V.I.** *Fiz. Goren. Vzryva.* 1990. Vol. 26, No. 3, P. 123-125 (in Russian). // Синтез алмаза из углерода продуктов детонации. **Волков К.В., Даниленко В.В., Елин В.И.** *Физика горения и взрыва.* 1990. Т. 26, № 3, С. 123-125.

064 On detonation synthesis of artificial diamonds. **Bushman A.V., Vorobyev V.S., Rahel' A.D., Fortov V.E.** *Dokl. Akad. Nauk USSR.* 1990. Vol. 315, No 5, P. 1124-1126 (in Russian). // О возможности электровзрывного синтеза искусственных алмазов. **Бушман А.В., Воробьев В.С., Рахель А.Д., Фортов В.Е.** *Докл. АН СССР.* 1990. Т. 315, № 5, С. 1124-1126.

065 Synthesis of diamond from the carbon in the detonation products of explosive. **Volkov K.V., Danilenko V.V., Elin V.N.** *Combust. Explos. Shock Waves.* 1990. Vol. 26, No. 3, P. 366-369.

066 The conservation of diamonds in detonation synthesis. **Petrov E.A., Sakovich G.V., Brylyakov P.M.** *Dokl. Akad. Nauk USSR.*1990.Vol. 313, No. 4, P. 862-864 (in Russian). // Условия сохранения алмазов в процессе детонационного получения. **Петров Е.А., Сакович Г.В., Брыляков П.М.** *Докл. АН СССР.* 1990. Т. 313, № 4, С. 862-864.

067 Influence of the shape and size of graphite and diamond crystalls on the phase equilibrium and detonation parameters. **Gubin S.A., Odintsov V.V., Pepekin V.I., Sergeev S.S.** *Khim. Fiz.* 1990. Vol. 9, No. 3, P. 401-417 (in Russian). // Влияние формы и размеров кристаллов графита и алмаза на фазовое равновесие углерода и параметры детонации. **Губин С.А., Одинцов В.В., Пепекин В.И., Сергеев С.С.** *Хим. физика.* 1990. Т. 9, № 3, С. 401-417.

068 The study of ultradisperse diamond synthesis by an isotropic method. **Kozyrev N.V., Sakovich G.V., Sen C.S., Shtejn M.S.** *Dokl. Akad. Nauk USSR.* 1990.Vol. 314, No. 4, P. 889-891 (in Russian). // Исследование процесса синтеза ультрадисперсных алмазов методом меченых атомов. **Козырев Н.В., Брыляков П.М., Сакович Г.В., Сен Ч.С., Штейн М.С.** *Докл. АН СССР.* 1990. Т. 314, № 4, С. 889-891.

069 A study of ultradispersed diamond sunthesis by detonation waves. **Titov V.M., Anisichkin V.F., Mal'kov Y.F.** *Fiz. Goren. Vzryva.* 1989. Vol. 25, No. 3. P. 117-126 (in Russian). // Исследование процесса синтеза ультрадисперсного алмаза в детонационных волнах. **Титов В.М, Анисичкин В.Ф, Мальков И.Ю.** *Физика горения и взрыва.* 1989. Т. 25, № 3, С. 117-126. (also 02.02)

070 Production of diamonds from explosives. **Lyamkin A.I., Petrov E.A, Ershov A.P., Sakovich G.V., Staver A.M., Titov V.M.** *Dokl. Akad. Nauk USSR.* 1988. Vol. 302, No. 3, P. 611-613. // Получение алмазов из взрывчатых веществ. **Лямкин А.И., Петров Е.А., Ершов А.П., Сакович Г.В., Ставер А.М., Титов В.М.** *Докл. АН СССР.* 1988. Т. 302, № 3, С. 611-613.

071 Diamonds in detonation soot. **Greiner N.R., Philips D.S., Johnson J.D., Volk F.** *Nature,* 1988. Vol. 333, P. 440-442.

See also **008, 020, 129, 208, 315**

➢ 02.02. Experimental features of detonations synthesis of nanodiamonds

072 Dynamic synthesis of diamonds. **Donnet J.B., Fousson E., Wang T.K., Samirant M., Baras C., Pontier Johnson M.** *Diamond Relat. Mater.* 2000. Vol. 9, No. 3-6, P. 887-892.

073 A commercial system for production of ultradispersed diamonds. **Gubarevich T.M., Korzhenevskii A.P., Gamanovich D.N.** *Superhard Materials.* 1998. No. 4, P. 14-19. // Промышленный комплекс по производству ультрадисперсных алмазов. **Губаревич Т.М., Корженевский А.П., Гаманович Д.Н.** *Сверхтвердые материалы.* 1998. № 4, С. 17-22.

074 Ammunition for diamonds. **Dolmatov V.Y., Zhirkevich V.Y., Postnov V.N.** *Dvoinie Tehnologii.* 1998. No. 3, P. 71-78 (in Russian). // Боеприпасы для алмазов. **Долматов В.Ю., Жиркевич В.Ю., Постнов В.Н.** *Двойные технологии.* 1998. № 3, P. 71-78.

075 Possible doping of ultradispersed diamond in detonation wave. **Lin E.E., Dubitsky G.A., Zyulkova T.V., Mazanov V.A., Sirenko A.V., Sukharenko V.I.** *Russian Chem.Phys.* 1997. Vol. 16, No. 3, P. 142-143.

076 Synthesis of nanodiamond via explosives and shock waves **Donnet J.B., Lemoigne C., Wang T.K., Peng C.M., Samirant M., Eckhardt A.** *Bull. Soc. Chem. Fr.* 1997. Vol. 134, P. 875-890.

077 The effect of the size and structure of carbon particle on the threshold shock-wave pressure in diamond production. **Pershin S.V., Tsaplin D.N., Dremin A.N., Ananiyan A.V.** *Khim. Fiz.* 1996. Vol. 15, No. 6, P. 113-120 (in Russian). // Влияние размера и структуры частиц углерода на пороговое давление образования алмаза в детонационной волне. **Першин С.В., Цаплин Д.Н., Дремин А.Н., Ананьян А.В.** *Химическая физика.* 1996. Т. 15, № 6, С. 113-120.

078 Carbon coagulation in nonstationary flow of detonation products. **Mal'kov Yu.I.** *Fiz. Goren. Vzryva.* 1994. Vol. 30, No. 5, C. 155-157 (in Russian). // Коагуляция углерода в условиях нестационарных течений продуктов детонации. **Мальков Ю.И.** *Физика горения и взрыва.* 1994. Т. 30, № 5, С. 155-157.

079 Effect of explosion conditions on the structure of detonation soots: ultradisperse diamonds and onion carbon. **Kuznetsov V.L., Malkov I.Yu., Chuvilin A.L., Moroz E.M., Kolomiichuk V.N., Shaichutdinov Sh.K., Butenko Yu.V.** *Carbon.* 1994. Vol. 32, P. 873-882.

080 Synthesis of ultradisperse diamond by detonation of a blend charge. **Kolomijchuk V.N., Mal'kov I.Yu.** *Fiz. Goren. Vzryva.* 1993. Vol. 29, No. 1, C. 120-128 (in Russian). // Исследование синтеза ультрадисперсной алмазной фазы в условиях детонации смесевых зарядов. **Коломийчук В.Н., Мальков И.Ю.** *Физика горения и взрыва.* 1993. Т. 29, № 1, С. 120-128.

081 A study of ultradisperse diamond synthesis from a mixture.of trinitrotoluene, hexogen, octogen and tenom. **Kozyrev N.V., Golubeva E.S.** *Fiz. Goren. Vzryva.* 1992. Vol. 28, No. 5, P.119-123. // Исследование процесса синтеза ультрадисперсных алмазов из смесей тротила с гексогеном, октогеном и тэном. **Козырев Н.В., Голубева Е.С.** // *Физика горения и взрыва.* 1992. Т. 28, No. 5, С. 119-123.

082 Estimation of the shape and size of diamond crystallites behind the shock-wave in condensed explosives. **Odintsov V.V. Gubin S.A., PepekinV.I., Akimova L.N.** *Khim. Fiz.* 1991. Vol. 10, No. 5, P. 687-695 (in Russian). // Определение формы и размера кристаллов алмаза за детонационной волной в конденсированных средах. **Одинцов В.В., Губин С.А., Пепекин В.И., Акимова Л.Н.** *Хим.физика.* 1991. Т. 10, № 5, С. 687-695.

083 The formation of the ultradisperse diamond phase of carbon by detonation of heterogeneous mixtures of octagen and organic liquids. **Mal'kov Yu.I.** *Fiz. Goren. Vzryva.* 1991. Vol. 27, No. 5, P. 136-140 (in Russian). // Образование ультрадисперсной алмазной фазы углерода в условиях детонации гетерогенных смесей, состоящих из октогена и жидкой органической добавки. *Физика горения и взрыва.* **Мальков Ю.И.** 1991. Т. 27, № 5, С. 136-140.

084 Diamond synthesis from the carbon of explosion products. **Volkov K.V., Danilenko V.V., Elin V.I.** *Fiz. Goren. Vzryva.* 1990. Vol. 26, No. 3, P. 123-125 (in Russian). // Синтез алмаза из углерода продуктов детонации. **Волков К.В., Даниленко В.В., Елин В.И.** *Физика горения и взрыва.* 1990. Т. 26, № 3, С. 123-125.

085 Production of diamond clusters by explosion and their application. **Sakovich G.V., Brylyakov P.M., Verestchagin A.L., Komarov V.F., Gubarevich V.D.** *Zhurnal Vses. Khim. Obschestva.* 1990. Vol. 35, No. 5, P. 600-602 (in Russian). // Получение алмазных кластеров взрывом и их практическое применение. **Сакович Г.В, Брыляков П.М., Верещагин А.Л., Комаров В.Ф., Губаревич В.Д.** *Журнал Всесоюзного химического общества.* 1990. Т. 35, № 5, С. 600-602.

086 On the abrupt change in the detonation rate dependence on the initial density trinitrotoluene. **Dryomin A.N., Pershin S.V., Pyaternev S.V., Tsaplin D.N.** *Fiz. Goren. Vzryva.* 1989. Vol. 25, No. 5, P. 141-143 (in Russian). // Об изломе зависимости скорости детонации от начальной плотности ТНТ. **Дремин А.Н., Першин С.В., Пятернев С.В., Цаплин Д.Н.** *Физика горения и взрыва.* 1989. Т. 25, № 5, С. 141-143.

087 An isotropic of decomposition in a detonation wave. **Anisichkin V.F., Derendyaev B.G., Koptyug V.A., Mal'kov Yu.I., Salahutdinov N.F., Titov V.M.** *Fiz. Goren. Vzryva.* 1988. Vol. 24, No. 3, P. 121-122 (in Russian). // Исследование процесса разложения в детонационной волне изотопным методом. **Анисичкин В.Ф., Дерендяев Б.Г., Коптюг В.А., Мальков Ю.И., Салахутдинов Н.Ф., Титов В.М.** *Физика горения и взрыва.* 1988. Т. 24. № 3, С. 121-122.

088 Diamond synthesis in dynamic loading of organic substansis. **AnisichkinV.F., Mal'kov I.Y., Titov V.M.** *Dokl. Akad. Nauk USSR.* 1988. Vol. 303, No. 3, P. 625-627 (in Russian). // Синтез алмаза при динамическом нагружении органических веществ. **Анисичкин В.Ф., Мальков И.Ю., Титов В.М.** *Докл. АН СССР.* 1988. Т. 303, № 3, С. 625-627.

See also **009, 012, 014, 018, 019, 026, 029, 052, 054, 056, 059, 061, 063, 065, 066, 070, 071, 536, 608, 620**

➢ 02.03. Methods of post-synthesis treatment (purification of nanodiamonds or selection or isolation of nanodiamonds from detonation carbon)

089 Formation of physicochemical properties of nanodiamond dispersions in the course of their recovery and purification. **Bogatyreva G.P., Marinich M.A., Bazaly G.A., Oleinik N.A., Gvyazdovskaya V.L., Shamraeva V.S.** *Superhard Materials.* 2002. No. 6. // Формирование физико-химических свойств наноалмазных дисперсий в процессе их извлечения и очистки. **Богатырева Г.П., Маринич М.А., Базалий Г.А., Олейник Н.А., Гвяздовская В.Л., Шамраева В.С.** *Сверхтвердые материалы.* 2002. № 6, С. 28-36.

See also **073, 248, 605, 613, 614, 617, 623, 624, 626, 628, 632, 633, 635, 636, 637, 638**

➢ 02.04. Other means of synthesis of nanodiamonds

090 Isolation and structure of higher diamondoids, nanometer-sized diamond molecules. **Dahl J.E., Liu S.G., Carlson R.M.K.** *Science.* 2003. Vol. 299, No. 5603, P. 96-99.

091 Manipulation of the equilibrium between diamond growth and renucleation to form a nanodiamond/amorphous carbon composite. **Zhou X.T., Li Q., Meng F.Y., Bello I., Lee C.S., Lee S.T., Lifshitz Y.** *Appl. Phys. Lett.* 2002. Vol. 80, No. 18, P. 3307-3309.

092 Carbon diffusion and nanocrystalline diamond formation in carbon ion-implanted oxides studied by nuclear elastic scattering. **Orwa J.O., Jamieson D.N., Prawer S., McCallum J.C.** *Nucl. Instrum. Methods.* 2001. Vol. 175-177, P. 554-558.

093 Diamond nanocrystals formed by direct implantation of fused silica with carbon. **Orwa J.O., Prawer S., Jamieson D.N., Peng J.L., McCallum J.C., Nugent K.W., Li Y.J., Bursill L.A., Withrow S.P.** *J. Appl. Phys.* 2001. Vol. 90, No. 6, P. 3007-3018.

094 Synthesis of diamond from carbon nanotubes under high pressure and high temperature. **Cao L.M., Gao C.X., Sun H.P., Zou G.T., Zhang Z., Zhang X.Y., He M., Zhang M., Li Y.C., Zhang J., Dai D.Y., Sun L.L., Wang W.K.** *Carbon.* 2001. Vol. 39, No, 2. P. 311-314.

095 Ion beam synthesis of graphite and diamond in silicon carbide. **Heera V., Skorupa W., Pecz B., Dobos L.** *Appl. Phys. Lett.* 2000. Vol. 76, No. 20, P. 2847-2849.

096 The chemical analysis of diamond and its metastability. **Kulakova I., Rudenko A.P.** Proceedings of the 4-th International Symposium on Diamond Films and Related Materials. September 20-22, 1999, Kharkov, Ukraine. P. 61-76.

097 The mechanism of phase transformation from carbon nanotube to diamond. **Wei B., Zhang J., Liang J., Wu D.** *Carbon.* 1998. Vol. 36, No. 7-8, P. 997-1001.

098 The production and application of detonation ultradisperse diamond powders. **Detkov P.Ya., Filatov L.I.** *Nov. Prom. Tehnol.* 1995. No. 3-4, P. 88-90 (in Russian). // Получение и применение синтетических детонационных ультрадисперсных алмазных порошков. **Детков П.Я., Филатов Л.И.** *Нов. пром. технологии.* 1995. № 3-4, С. 88-90.

099 Nucleation and growth of diamond in detonation products. **Yamada K., Sawaoka A.B.** *J. Amer. Ceram. Soc.* 1994.Vol. 77, No. 4, P. 1104.

100 Polyadamantan as a source of diamond-like carbon. **Kudryavtsev Y.P., Bystrova N.A.** *Izv. Ross. Akad. Nauk. Khim.* 1988. Vol. 47, No. 7, P. 1438-1440 (in Russian). // Полиадамантан как источник алмазоподобного углерода. **Кудрявцев Ю.П., Быстрова Н.А.** // Изв. АН, сер. Хим. 1998. Т. 47, № 7, С. 1438-1440.

See also **057, 064, 334, 538, 555, 612**

02.04.01. Shock wave compression of carbon phases

101 Allotropes of carbon shock synthesized at pressures up to 15 GPa. **Yamada K., Tanabe Y., Swaoka A.B.** *Phil. Mag. A.* 2000. Vol. 80, No. 8, P. 1811-1828.

102 A qualitative model of shock induced growth of crystalline mesosystems in condensed media. **Lin E.** *Chem. Phys. Reports.* 2000. Vol. 18, No. 10-11, P. 2185-2189.

103 Shock synthesis of nanodiamonds from carbon precursors: identification of carbynes. **Donnet J.-B., Fousson É., Samirant M., Wang T.K., Pontier-Johnson M., Eckhardt A.** *Comptes Rendus de l'Académie des Sciences - Series IIC - Chemistry).* 2000. Vol. 3, No. 5, P. 359-364.

104 Thermodynamic properties of detonated nanodiamond and powders, received by their dynamic compacting. **Malyshev A.N., Lin E.E., Novikov S.A., Pavlovskaya M.A., Sukharenko V.I., Zhogova K.B., Lebedev B.V.** *Chem. Phys.* 2000. Vol. 19, P. 74-75.

105 Characterization and some properties of shock-wave diamond powders. **Bogatyreva G.P., Voloshin M.N.** *Superhard Materials.* 1998. No. 4, P. 82-86.

106 Physicochemical properties of shock wave-synthesized nanometric diamond. **Bogatyreva G.P., Gvyazdovskaya V.L., Danilenko V.V.** *Chem. Vap. Deposition.* 1997. Vol. 6, No. 1, P. 65-71.

107 Formation of diamond during passage of a shock wave in a copper/graphite powder: Formation process and numerical simulation. **Burkhard G., Tamura H., Tanabe Y., Sawaoka A.B., Yamada K.** *Appl. Phys. Lett.* 1995. Vol. 66, No. 23, P. 3131-3133.

108 Predominant parameters in the shock-induced transition from graphite to diamond. **Hirai H., Kukino S., Kondo K.** *J. Appl. Phys.* 1995. Vol. 78, No. 5, P. 3052-3059.

See also **026, 050, 076**

02.04.02. Irradiation of carbon species

109 Nanocrystalline diamond formation during argon ion irradiation of graphite **Wang Z.X., Yu G.Q., Yu L.P., Zhu F.Y., Zhu D.Z., Xu H.J., Ruan M.L.** *J Appl. Phys.* 2002. Vol. 91, No. 5, P. 3480-3482.

110 Creation of nanodiamonds by single impacts of highly charged ions upon graphite. **Meguro T., Hida A., Suzuki M., Koguchi Y., Takai H., Yamamoto Y., Maeda K., Aoyagi Y.** *Appl. Phys. Lett.* 2001. Vol. 79, No. 23, P. 3866-3868.

111 Nanoscale modification of electronic states of graphite by highly charged Ar-ion irradiation. **Meguro T., Hida A., Suzuki M., Koguchi Y., Takai H., Yamamoto Y., Maeda K., Aoyagi Y.** *J. Vac. Sci. Technol. B.* 2001. Vol. 19, No. 6, P. 2745-2748.

112 Production of nanodiamonds by high-energy ion irradiation of graphite at room temperature. **Daulton T.L., Kirk M.A., Lewis R.S., Rehn L.E.** *Nucl. Instrum. Methods B.* 2001. Vol. 175-177, P. 12-20.

113 Low-pressure transformation of graphite to diamond unders irradiation. **Lyutovich Y., Banhart F.** *Appl. Phys. Lett.* 1999. Vol. 74, No. 5, P. 659-660.

See also **195, 200, 323, 355, 542, 551, 552, 554**

02.04.03. Homogeneous formation in a gas phase

114 Plasma synthesis of nanocarbons. **Huczko A., Lange H., Cota-Sanchez G., Soucy G.** *High. Temp. Mater. P-Us.* 2002. Vol. 6, No. 3, P. 369-384.

115 CO_2-laser-induced vapor-phase synthesis of HN-diamond nanoparticles at 0.6-2 bar. **Buerki P.R., Leutwyler S.** *Nanostruct. Mater.* 1994. Vol. 4, No. 5, P. 577-582.

116 Diamond powder formation from the gas phase. **Howard W., Frenklach M., Spear K.E., Huang D., Yuan J., Kematick R., Koba R., Phelps A.W.** Proceedings of the Second International Conference on New Diamond Science and Technology, Eds.: Messier R., Glass J.T., Butler J.E., Roy R. Materials Research Society, Pittsburgh, PA, 1991, P. 313-319.

117 Induced nucleation of diamond powder. **Frenklach M., Howard W., Huang D., Yuan J., Spear K.E., Koba R.** *Appl. Phys. Lett.* 1991. Vol. 59, P. 546-548.

118 Molecular processes in diamond formation. **Frenklach M.** In: Proceedings of the Second International Symposium on Diamond Materials, Eds.: Purdes A.J., Angus J.C., Davis R.F., Meyerson B.M., Spear K.E., Yoder M. The Electrochemical Society, Pennington, N.J., 1991, P. 142-153.

119 A unifying picture of gas phase formation and growth of PAH, soot, diamond and graphite. **Frenklach M.** In: Carbon in the Galaxy: Studies From Earth and Space. Eds.: Tarter J.C., Chang S., DeFrees D.J. NASA Conference Publication 1990. Vol. 3061. P. 259-273.

120 Synthesis of diamond powder in acetylene-oxygen plasma. **Howard W., Huang D., Yuan J., Frenklach M., Spear K.E., Phelps A.W., Koba R.** *J. Appl. Phys.* 1990. Vol. 68. P. 1247-1251.

121 Homogeneous nucleation of diamond. **Huang D., Frenklach M., Howard W., Kematick R., Spear K., Koba R.** Nineteenth Biennial Conference on Carbon, The Pennsylvania State University, 1989, P. 384-385.

122 Homogeneous nucleation of diamond powder in the gas phase. **Frenklach M., Kematick R., Huang D., Spear K.E., Phelps A.W., Koba R.** *J. Appl. Phys.* 1989. Vol. 66, P. 395-399.

See also **367, 370, 375**

■ 02.04.04. Carbide derived (clorination)

123 Nucleation, growth and graphitization of diamond nanocrystals during chlorination of carbides. **Welz S., Gogotsi Y., McNallan M.J.** *J. Appl. Phys.* 2003. Vol. 93, No. 7, P. 4207-4214.

124 X-Ray and HRTEM structural studies of bulk nanoporous carbon materials produced from carbides. **Smorgonskaya E., Kyutt R., Danishevskii A., Jardin C., Meaudre R., Marty O., Gordeev S., Grechinskaya A.** *J. Non-Cryst. Sol.* 2002. Vol. 299-302, P. 810-814.

125 Conversion of silicon carbide to crystalline diamond-structured carbon at ambient pressure. **Gogotsi Y., Welz S., Ersoy D.A., McNallan M.J.** *Nature.* 2001. Vol. 411, P. 283-287.

126 Nanostructured carbon coatings on silicon carbide: experimental and theoretical study, in functional gradient materials and surface layers prepared by fine particles technology. **Gogotsi Y., Kamyshenko V., Shevchenko V., Welz S., Ersoy D.A., McNallan M.J.** Kluwer Academic Pub.: Dordrecht, NL 2001. Ed. by Baraton M.-I., Uvarova I.P. 239-255.

127 Carbon coatings on silicon carbide by reaction with chlorine-containing gases. **Gogotsi Y.G., Jeon J.-D., McNallan M.J.** *J. Mater. Chem.* 1997. Vol. 7, No. 9, P. 1841-1848.

03. Models for formation of nanodiamonds

➢ 03.01.Carbon phase diagram at the Nanoscale

128 Phase diagram of ultrafine carbon. **Vereshchagin A.L.** *Combust. Explos. Shock waves* 2002. Vol.38, No.3, P.358-359.

129 Kinetics and thermodynamic behavior of carbon clusters under high pressure and high temperature. **Ree F.H., Winter N.W., Glosli J.N., Viecelli J.A.**, *Physica B.* 1999. Vol. 265, P. 223-229.

130 Liquid-liquid phase transformation in carbon. **Glosli J.N., Ree F.H.** *Phys. Rev. Lett.* 1999. Vol. 82, No. 23, P. 4659-4662.

131 The melting line of diamond determined via atomistic computer simulation. **Glosli J.N., Ree F.H.** *J. Chem. Phys.* 1999. Vol. 110, No. 1, P. 441-446.

132 The pressure-temperature phase and transformation diagram for carbon: updated through 1994. **Bundy F.P., Bassett W.A., Weathers M.S., Hemley R.J., Mao H.K., Goncharov A.F.** *Carbon.* 1996. Vol. 34, P. 141-153.

133 Study of onion-like carbon (OLC) formation from ultra disperse diamond. **Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Malkov I.Yu., Gutakovskii A.K., Stankus S.V. Khairulin R.A.** In: Science and Technology of Fullerene Materials, Eds.: Bernuer P., Bethune D.S., Chiang L.Y., Ebbessen T.W., Metzger R.M., Minmire J.W. *Mater. Res. Soc. Proc.* Vol. 359, Pittsburgh, PA, 1995, P. 105-110.

134 Ab-initio calculations of properties of carbon in the amorphous and liquid states. **Galli G., Martin R.M., Car R., Parrinello M.** *Phys. Rev. B.* 1990. Vol. 42, P. 7470-7482.

See also **011, 047, 049, 050, 058, 059, 067, 104, 110, 146, 149, 153, 156, 157, 197**

➢ 03.02. Computer simulations of nanodiamond structure

135 Bonding and stability of hybrid diamond/nanotube structures. **Shenderova O.A., Areshkin D., Brenner D.W.**, *Mol.Simulat.* 2003. Vol. 29, No. 4, P. 259-268.

136 Carbon based nanostructures: diamond clusters structured with nanotubes. **Shenderova O.A., Areshkin D., Brenner D.W.** *Mater. Res.* 2003. Vol. 6, No. 1, P. 11-19.

137 First principles investigations of diamond ultrananocrystals. **Barnard A.S., Russo S.P., Snook I.K.**. *Int. J. Mod. Phys. B.* (2003) in press.

138 Hydrogen stabilization of {111} nanodiamond. **Barnard A.S., Marks N.A., Russo S.P., Snook I.K.** *Mat. Res. Soc. Symp. Proc.* 2003. Vol. 740.

139 Quantum confinement and fullerene-like surface reconstructions in nanodiamonds. **Raty J.-Y., Galli G., Bostedt C., van Buuren T.W., Terminello L.J.** *Phys. Rev. Lett.* 2003. Vol. 90, art. no.- 037401.

140 Atomic modeling of carbon-based nanostructures as a tool for developing new materials and technologies. **Brenner D.W., Shenderova O.A., Areshkin D.A., Schall J.D., Frankland S.J.** *Computer Modeling & Eng.Sci.* 2002. Vol. 3, No. 5, P. 643-673.

141 Tight-binding molecular-dynamics simulation of impurities in ultrananocrystallinediamond grain boundaries. **Zapol P., Sternberg M., Curtiss L.A., Frauenheim T., Gruen D.M.** *Phys. Rev.* B. 2002. Vol. 65, No. 4, art. no.-045403.

142 Structural models of amorphous carbon and its surfaces by tight-binding molecular dynamics. **Haerle R., Baldereschi A., Galli G.** *J. Non-Cryst. Solids.* 2000. Vol. 266, P. 740-745.

143 Tight binding modeling of properties related to field emission from nanodiamond clusters. **Areshkin D.A., Shenderova O.A., Zhirnov V.V., Pal A.F., Hren J.J., Brenner D.W.** *Mat. Res. Soc. Proc.* 2000. Vol. 621, R.5.161.

See also **007, 048, 051, 066, 107, 129, 144, 145, 147, 152, 259, 311, 529, 539, 562, 563, 564**

➢ 03.03. Stability of nanodiamonds

144 Ab initio modelling of the stability of nanocrystalline diamond morphologies. **Barnard A.S., Russo S.P., Snook I.K.** *Phil. Mag. Lett.* 2003. Vol. 83, No. 1, P. 39-45.

145 Hydrogenation of nanodiamond surfaces: Structure and effects on crystalline stability. **Russo S.P., Barnard A.S., Snook I.K.** *Surf. Rev. Lett.* (2003) in press.

146 Size dependent phase stability of carbon nanoparticles: Nanodiamond versus fullerenes. **Barnard A.S., Russo S.P., Snook I.K.** *J. Chem. Phys.* 2003. Vol. 118, No. 11. P. 5094-5097.

147 Structural relaxation and relative stability of nanodiamond morphologies. **Barnard A.S., Russo S.P., Snook I.K.**, *Diamond Relat. Mater.* (2003) in press.

148 On energetic stability of carbon nanoclasters. **Kozyrev S.V., Leshev D.V., Shaklina I.V.** *Phys. Solid State.* 2001. Vol. 43, No. 5, P. 963-966.

149 Size dependence of structural stability in nanocrystalline diamond. **Prawer S., Peng J.L., Orwa J.O., McCallum J.C., Jamieson D.N., Bursill L.A.** *Phys. Rev. B.* 2000. Vol. 62, No. 24, P. R16360-R16363.

150 The size dependence of the diamond-graphite transition. **Jiang Q., Li J.C., Wilde G.** *Jour. Phys: Condens.Matter.* 2000. Vol. 12, No, 26. P. 5623-5627.

151 Analysis of stability of nanoparticles. **Dolgushev N.V., Suvorov S.A.** *Doklady Physical Chemistry.* 1999. Vol. 364, No. 1-3, P. 15-17.

152 Carbon particle phase stability as a function of size. **Winter N.W., Ree F.H.** *Comp. Aided Design.* 1998. Vol. 5, P. 279-294.

153 Stability of the graphite and diamond phases of finite carbon clusters. **Winter N.W., Ree F.H.** 11 International Detonation Symposium, Snowmass, August 29-September 4, 1998, Colorado, USA. P. 480-489.

154 Mechanism of thermal stability enhancement in boron-doped ultrafine diamonds. **Ivanov Yu.N., Kalinkin A.V., Tushko Yu.V.** *Inorganic Materials.* 1997. Vol. 33, No. 7, P. 674-677. Translated from *Neorganicheskie Materialy.* 1997. Vol. 33, No. 7, P. 803-806.

155 Properties of diamond and diamond-like clusters in nanometric dimensions. **Halicioglu T.**, *Phys. Stat. Sol. B.* 1997. Vol. 199, P. 345-350.

156 Energetical preference of diamond nanoparticles. **Gamarnik M.Y.** *Phys. Rev. B.* 1996. Vol. 54, P. 2150-2156.

157 Nanometre-sized diamonds are more stable than graphite. **Badziag P., Verwoerd W.S., Ellis W.P., Greiner N.R.** *Nature.* 1990. Vol. 343, P. 244-245.

See also **001, 006, 007, 011, 129, 202, 529**

➢ 03.04. Models of nanodiamond formation by other means than detonation synthesis

158 The mechanism of diamond nucleation from energetic species. **Lifshitz Y., Kohler T., Frauenheim T., Guzmann I., Hoffman A., Zhang R.Q., Zhou X.T., Lee S.T.** *Science.* 2002. Vol. 297, No. 5586, P. 1531-1533.

159 On the cluster mechanism of diamond synthesis from different solid carbon forms. **Lin E.** *Phys. Solid State.* 2000. Vol. 42, No. 10, P. 1946-1951. (also 02.01 and 02.04)

160 Crystal growth of CVD diamond and some of its peculiarities. **Piekarczyk W.**, *Cryst. Res. Technol.* 1999. Vol. 34, No. 5-6, P. 553-563.

161 Charged cluster model in the low pressure synthesis of diamond. **Hwang N.M., Hahn J.H., Yoon D.** *J. Cryst.Growth.* 1996. Vol. 162. P. 55-68.

162 Chemical potential of carbon in the low pressure synthesis of diamond. **Hwang N.M., Hahn J.H., Yoon D.** *J. Cryst. Growth.* 1996. Vol. 160, P. 87.

163 Theoretical studies of growth of diamond (110) from dicarbon. **Redfern P.C., Horner D.A., Curtiss L.A., D.M. Gruen.** *J. Phys. Chem.* 1996. Vol. 100, No. 28, P. 11654-11663.

164 A theoretical study of the energetics of insertion of dicarbon (C_2) and vinylidene into methane C-H bonds. **Horner D.A., Curtiss L.A., Gruen D.M.** *Chem. Phys. Lett.* 1995. Vol. 233, P. 234-248.

See also **178, 189, 279, 298, 310, 520**

04. Physical properties of nanodiamonds

165 Thermodynamics of surface phenomena in ultradispersed diamond systems. **Duda T.M.** *Superhard Materials.* 2001. No. 3, P. 48-56. // Термодинамика поверхностных явлений ультрадисперсных алмазных систем. **Дуда Т. М.** *Сверхтвердые материалы.* 2001. № 3, С. 54-61.

166 Magnetic properties of finely dispersed diamond powders. **Bogatyreva G.P., Nevstruev G.F., Ilnitskaya G.D.** *Superhard Materials.* 2000. No. 1. P. 2-6. // Магнитные свойства тонкодисперсных алмазных порошков. **Богатырева Г.П., Невструев Г.Ф., Ильницкая Г.Д.** *Сверхтвердые материалы.* 2000. № 1, С. 4-9.

167 Structure and properties of ultradispersed diamond of detonated synthesis. **Chiganova G.A. Chiganov A.S.** *Inorg. Mater. -Engl. Tr.* 1999. Vol. 35, P. 480-484.

168 Comparative study of nanocrystalline diamond. **Obraztsov A.M., Timofeyev M.A., Guseva M.B., Babaev V.G., Valliulova Z.Kh., Babina V.M.** *Diamond Relat. Mater.* 1995. Vol. 4, No. 4, P. 968-971.

169 Nano-ball bearing effect of ultra-fine particles of cluster diamond. **Ouyang Q., Okada K.** *Appl. Surf. Sci.* 1994. Vol. 78, P. 309-313.

170 The properties of ultradisperse diamonds produced by detonation synthesis. **Chiganova G.A., Chiganov A.S., Tushkov Yu.V.** *Izv. Ross. Akad. Nauk, Neorg. Mater.* 1994. T. 30, No. 1, P. 56-58 (in Russian). // Свойства ультрадисперсных алмазов, полученных методом детонационного синтеза. **Чиганова Г.А., Чиганов А.С., Тушков Ю.В.** *Изв. Академии Наук. Неорганические Материалы.* 1994. Т. 30, № 1, С. 56-58.

171 Properties of ultrafine diamond clusters from detonation synthesis. **Vereschagin A.L., Sakovich G.V., Komarov V.F., Petrov E.A.** *Diamond Rel. Mater.* 1993. Vol. 3, P. 160-162.

172 The properties and IR-characteristics of chemically modified nanodiamonds. **Kulakova I.I., Tarasevich B.N., Rudenko A.P., Dorzhpalamyn P., Gubarevich T.M.** *Vestn. Mosk. Un-ta.* Ser.2. Khimiya. 1993. Vol. 34, No. 5, P. 506-510 (in Russian). // Природа и ИК-спектральные характеристики химически модифицированных ультрадисперсных алмазов. **Кулакова И.И., Тарасевич Б.Н., Руденко А.П., Доржпаламын П., Губаревич Т.М.** *Вестн. Моск. Ун-та.* Сер.2. Химия. 1993. Т. 34, № 5, С. 506-510.

173 The properties of ultrafine diamond clusters produced by detonation synthesis. **Vereschagin A.L., Sakovich G.V., Komarov V.F., Petrov E.A.** *Diamond Relat. Mater.* 1993. No. 3, P. 160-162.

174 Study of ultra disperse diamond obtained using explosion energy. **Kuznetsov V.L., Aleksandrov M.N., Zagoruiko I.V., Chuvilin A.L., Moroz E.M., Kolomiichuk V.N., Likholobov V.A., Brylyakov P.M., Sokovich G.V.** *Carbon.* 1991. Vol. 29, P. 665-668.

See also **075, 105, 106**

➢ 04.01. Structure of nanodiamonds

175 Structure of detonation diamond nanoparticles. **Vereshchagin A.L., Yur'ev G.S.** *Inorg. Mater.* 2003. Vol. 39, No. 3, P. 247-253.

176 Analysis of short and long range atomic order in nanocrystalline diamonds with application of powder diffractometry. **Palosz B., Grzanka E., Gierlotka S., Stel'makh S., Pielaszek R., Bismayer U., Neuefeind J., Weber H.P., Proffen T., Von Dreele R., Palosz W.** *Z. Kristallogr.* 2002. Vol. 217, No. 10, P. 497-509.

177 Field electron emission and nanostructural correlations for diamond and related materials. **Frolov V.D., Karabutov A.V., Pimenov S.M., Konov V.I.** *Ultramicroscopy.* 2003. Vol. 95, No. 1-4, P. 99-105.

178 Size and surface structure of diamond nano-crystals. **Bursill L.A., Fullerton A.L., Bourgeois L.N** *Intern. J. Mod. Phys. B.* 2001. Vol. 15, No. 31, P. 4087-4102.

179 Structure of detonation nanodiamonds. **Vereshchagin A.L., Sakovich G.V.** *Mendeleev Communs.* 2001. No. 1, P. 39-41.

180 Effect of hydrogen on the structure of ultradisperse diamond. **Aleksenskii A.E., Baidakova M.V., Vul'A.Ya., Dideikin A.T., Siklitsky V.I., Vul' S.P.** *Phys. Solid State.* 2000. Vol. 42, No. 8, P. 1575-1578.

181 Structure and defects of detonation synthesis nanodiamond. **Iakoubovskii K., Baidakova M.V., Wouters B.H., Stesmans A., Adriaenssens G.J., Vul'A.Y., Grobet P.J.** *Diam. Rel. Mater.* 2000. Vol. 9, No. 3-6, P. 861-865.

182 Structure of ultradisperse diamonds. **Andreev V.D., Sozin Yu.I.** *Phys. Solid State.* 1999. Vol. 41, No. 10, P. 1736-1739.

183 The structure of diamond nanoclusters. **Aleksenskii A.E., Baidakova M.V., Vul'A.Ya., Siklitsky V.I.** *Phys. Solid State.* 1999. Vol. 41, No. 4, P. 668-671.

184 Fractal structure of ultradisperse-diamond clusters. **Baidakova M.V., Vul'A.Ya., Siklitsky V.I., Faleev N.N.** *Phys. Solid State.* 1998. Vol. 40, No. 4, P. 715-718.

185 Structural properties of diamond fine particles and clusters prepared by detonation and decomposition of TNT. **Saha D.K., Koga K., Takeo H.** *Surf. Sci.* 1998. Vol. 400, P. 134-139.

186 Structure features of explosion-synthesized nanodispersed diamonds. **Kurdyumov A.V., Ostrovskaya N.F., Zelyavskii V.B., Borimchuk N.I., Yarosh V.V.** *Superhard Materials.* 1998. No. 4, P. 20-25. // Структурные особенности нанодисперсных алмазов динамического синтеза. **Курдюмов А.В., Островская Н.Ф., Зелявский В.Б., Боримчук Н.И., Ярош В.В.** *Сверхтвердые материалы.* 1998. № 4. С. 23-29.

187 Structure of ultradispersed diamond crystallites. **Andreyev V.D., Sozin Yu.I.** *Superhard Materials.* 1998. No. 4, P. 61-65. // Структура кристаллитов ультрадисперсных алмазов. **Андреев В.Д., Созин Ю.И.** *Сверхтвердые материалы.* 1998. № 4, С. 67-72.

188 Plasmon response and structure of nanocrystalline diamond powder. **Bursill L.A., Peng J.L., Prawer S.** *Phil. Mag. A.* 1997. Vol. 76, No. 4, P. 769-781.

189 Structure and properties of detonation soot particles. **Mal'kov I.Y., Titov V.M.** *AIP Conference Proceedings.* 1996. Vol. 370, No. 1, P. 783-786.

190 Structure, substructure and phase composition of ADS and UDA ultradispersed diamond. **Bogatyreva G.P., Sozin Yu.I., Oleinik N.A.** *Superhard Materials.* 1998. No. 4. P. 3-7. // Структура, субструктура, фазовый состав ультрадисперсных алмазов АДС и УДА. **Богатырева Г.П., Созин Ю.И., Олейник Н.А.** *Сверхтвердые материалы.* 1998. № 4, P. 5-10.

See also **010, 018, 205, 351, 412, 425, 427, 428, 502, 536**

➢ 04.02. Mechanical properties

191 Nanomechanical resonant structures in nanocrystalline diamond. **Sekaric L., Parpia J.M., Craighead H.G., Feygelson T., Houston B.H., Butler J.E.** *Appl. Phys. Lett.* 2002. Vol. 81, P. 4455-4457.

192 Surface acoustic waves on nanocrystalline diamond. **Bi B., Huang W.-S., Asmussen J., Golding B.** *Diam. Rel. Mater.* 2002. Vol. 11, P. 677-680.

193 Some speculations on the density of particles of dynamically synthesized diamond nanopowder. **Bochechka A.A., Romanko L.A., Gavrilova V.S.** *Superhard Materials.* 2001. No. 5, P. 72-73. // О плотности частиц алмазного нанопорошка динамического синтеза. **Бочечка А.А., Романко Л.А., Гаврилова В.С.** *Сверхтвердые материалы.* 2001. № 5, С. 76-78.

194 Effect of diamond dispersion on the superplastic rheology of zinc sulfide. **Xue L.A., Raj R.** *J. Amer. Ceram. Soc.* 1990. Vol. 73, No. 8, P. 2213-2216.

See also **013, 190, 197, 421, 425, 428, 439, 441, 442, 523**

➢ 04.03. Phase transitions

195 Transformation of diamond nanoparticles into carbon onions under electron irradiation. **Roddatis V.V., Kuznetsov V.L., Butenko Y.V., Su D.S., Schlogl R.** *Phys. Phys. Chem. Chem. Phys.* 2002. Vol. 4, No. 10, P. 1964-1967.

196 Effect of heat treatment on the properties of nano-diamond under oxygen and argon ambient. **Xu N.S., Chen J., Deng S.Z.** *Diam. Rel. Mater.* 2002. Vol. 11, P. 249-256.

197 Size and temperature dependence of nanodiamond-nanographite transition related with surface stress. **Zhao D.S., Zhao M., Jiang Q.** *Diamond Relat. Mater.* 2002. Vol. 11, P. 234-236.

198 Nanostructural study of the thermal transformation of diamond-like amorphous carbon into an ultrahard carbon nanocomposite. **Martinez-Miranda L.J., Siegal M.P., Provencio P.P.** *Appl. Phys. Lett.* 2001. Vol. 79, No. 4, P. 542-544.

199 Recovery of diamond after irradiation at high energy and annealing. **Prawer S., Bursill L.A., Lai P.F.** *Diamond Relat. Mater.* 2001. Vol. 10, P. 82-86.

200 Transformation of diamond nanoparticles into carbon onions under electron irradiation. **Roddatis V.V., Kuznetsov V.L., Butenko Y.V., Su D.S., Schlogl R.** *Phys. Phys. Chem. Chem. Phys.* 2002. Vol. 4, No. 10, P. 1964-1967.

201 Heat-treatment effect on the nano-sized graphite p-electron system during diamond to graphite conversion. **Prasad L.V., Sato H., Enoki T., Hishiyama Y., Kaburagi Y., Rao A.M., Eklund P.C., Oshida K., Endo M.** *Phys. Rev. B.* 2000. Vol. 62, No. 16, P. 11209-11218.

202 The kinetics of the graphitization of dispersed diamonds at 'low' temperatures. **Butenko Yu.V., Kuznetsov V.L., Chuvilin A.L., Kolomiichuk V.N., Stankus S.V., Khairulin R.A., Segall B.** *J. App. Phys.* 2000. Vol. 88, No. 7, P. 4380-4388.

203 Graphitization of nanodiamond powder annealed in argon ambient. **Chen J., Deng S.Z., Chen J., Yu Z.X., Xu N.S.** *Appl. Phys. Lett.* 1999. Vol. 74, No. 24. P. 3651-3653.

204 Ultradisperse-diamond nanoclusters. fractal structure and diamond-graphite phase transition. **Baidakova M.V., Siklitsky V.I., Vul A.Ya.** *Chaos, Solitons, & Fractals.* 1999. Vol. 10, No. 12, P. 2153-2163.

205 Diamond-graphite phase-transition in ultradisperse-diamond clusters. **Aleksenskii A.E., Baidakova M.V., Vul' A.Y., Davydov V.Y., Pavtsova Y.A.** *Phys. Solid State.* 1997. Vol. 39, No. 6, P. 1007-1015.

206 A microscopic model for surface-induced diamond to graphite transitions. **DeVita A., Galli G., Canning A., Car R.** *Nature.* 1996. Vol. 379, P. 523-526.

207 Melting of diamond at high pressure. **Galli G., Martin R.M., Car R., Parrinello M.** *Science.* 1990. Vol. 250, P. 1547.

208 Carbon: the nature of the liquid state. **Galli G., Martin R.M., Car R., Parrinello M.** *Phys. Rev. Lett.* 1989. Vol. 63, P. 988-991.

See also **050, 060, 079, 093, 112, 133, 254, 302, 323, 348, 512, 535, 538, 543, 551, 552, 553, 554, 555, 558, 559**

➢ 04.04. Optical properties

209 Detonation synthesis ultradispersed diamond structural properties investigation by infrared absorption. **Mironov E., Koretz A., Petrov E.** *Diamond Relat. Mater.* 2002. Vol. 11, P. 872-876.

210 Large-scale calculation of optical dielectric functions of diamond nanocrystallites. **Kurokawa Y., Nomura S., Takemori T., Aoyagi Y.** *Phys. Rev. B.* 2000. Vol. 61, No. 19, P. 12616-12619.

211 Optical properties of nanodiamond layers. **Aleksenskii A.E., Osipov V.Yu., Vul'A.Ya., Ber B.Ya., Smirnov A.B., Melekhin V.G., Adriaenssens G.J., Iakoubovskii K.** *Phys. Solid State.* 2001. Vol. 43, No. 1, P. 145-150.

212 Plasmon excitations in coated nanocrystalline diamond spheres. **Fehlhaber R.P., Bursill L.A.** *Phys, Rev. B.* 2000. Vol. 62, No. 24, P. 17094-17102.

213 Power laser light-induced photoluminescence from detonation-synthesized 5nm-sized diamonds. **Glinka Yu.D., Lin K.W., Chang H.C., Lin S.H., Chen Y.T.** *Diffus. Defect Data.* Pt.A. 2000. P. 186-187; (*Defects and Diffusion in Ceramics.* 2000. Vol. 3, P. 37-44).

214 The Raman spectrum of nanocrystalline diamond. **Prawer S., Nugent K.W., Jamieson D.N., Orwa J.O., Bursill L.A., Peng J.L.** *Chem. Phys. Lett.* 2000. Vol. 332, No. 1-2, P. 93-97.

215 Multiphoton-excited luminescence from diamond nanoparticles. **Glinka Yu.D., Lin K.-W., Chang H.-C., Lin S.H.** *J. Phys. Chem. B.* 1999. Vol. 103, No. 21, P. 4251-4263.

216 Nanoscale size effects on the plasmon response of diamond powder. **Fehlhaber R.P., Bursill L.A.** *Phil. Mag. B.* 1999. Vol. 79, No. 3, P. 477-489.

217 Two-photon-excited luminescence spectra in diamond nanocrystals. **Mikov S.N., Igo A.V., Gorelik V.S.** *Phys. Solid State.* 1999. Vol. 41, No. 6, P. 1012-1014.

218 FTIR study of the adsorption of water on ultradispersed diamond powder surface. **Ji S., Jiang T., Xub K., Li S.** *Appl. Surf. Sci.* 1998. Vol. 133, No. 4, P. 231-238.

219 Optical properties of layers of ultradisperse diamond obtained from an aqueous suspension. **Aleksenskii A.E., Osipov V.Yu., Kryukov N.A., Adamchuk V.K., Abaev M.I., Vul'S.P., Vul'A.Ya.** *Technical Physics Letters.* 1997. Vol. 23, No. 11, P. 874-876.

220 Photoluminescence spectra of ultradisperse diamond. **Kompan M.E., Terukov E.I., Gordeev S.K., Zhukov S.G., Nikolaev Yu.A.** *Phys. Solid State.* 1997. Vol. 39, No. 12, P. 1928-1929.

221 FTIR studies on the spectral changes of the surface functional groups of ultradispersed diamond powder synthesized by explosive detonation after treatment in hydrogen, nitrogen, methane and air at different temperatures. **Xu T., Jiang K., Ji S.** *J. Chem. Soc. Faraday Trans.* 1996. Vol. 92, No. 18, P. 3401-3406.

222 Raman and photoluminescence spectra of diamond particles with 1-5 nm diameter. **Obraztsova E.D. Kuznetsov V.L., Loubnin E.N., Pimenov S.M., Pereverzev V.G.** NATO ASI Series 3, Nanoparticles in Solids and Solutions, **Eds. Fendler J.H., Dekany I.** Kluwer Academic Pub.: 1996. Vol. 18, P. 485-496. (also 06.03)

223 FTIR study of ultradispersed diamond powder synthesized by explosive detonation **Jiang T., Xu K.** *Carbon.* 1995. Vol. 33, No. 12, P. 1663-1671.

224 Raman scattering from nanometer-sized diamond. **Yoshikawa M., Mori Y., Obata H., Maegawa M., Katagiri G., Ishida H., Ishitani A.** *Appl. Phys. Lett.* 1995. Vol. 67, No. 5, P. 694-696.

225 Raman scattering of light on diamond quantum dots in a matrix of potassium bromide. **Mikov S.N., Igo A.V., Gorelik V.S.** *Phys. Solid State.* 1995. Vol. 37, No. 10, P. 1671-1673.

See also **172, 240, 289, 293, 304, 349, 356, 362, 471, 518, 530, 578, 585, 592**

➢ 04.05. Electronic properties

226 Ab initio modelling of band states in doped diamond. **Barnard A.S., Russo S.P., Snook I.K.** *Phil. Mag.* 2003. Vol. 83, No. 9, P. 1163-1179.

227 Ab initio modelling of B and N in C_{29} and $C_{29}H_{24}$ nanocrystalline diamond. **Barnard A.S., Russo S.P., Snook I.K.** *J. Chem. Phys.* 2003, in press

228 Electron spectroscopy of nanodiamond surface states. **Belobrov P.I., Bursill L.A., Maslakov K.I., Dementjev A.P.** *Appl. Surf. Sci.* 2003. Vol. 210, No. 1-4, in press.

229 Sp(2) bonding distributions in nanocrystalline diamond particles by electron energy loss spectroscopy. **Okada K., Kimoto K., Komatsu S., Matsumoto S.** *J. Appl. Phys.* 2003. Vol. 93, No. 5, P. 3120-3122

230 Electronic states of nanodiamond. **Belobrov P.I., Bursill L.A., Dementjev A.P., Detkov P.Ya., Maslakov K.I.** Proc. 14-th Intern. Symp. On Thin Films in Electronics, Kharkov, Ukraine, 2002, April 22-27, P. 25-29.

231 EPR studies of submicron and nanometric diamond. **Maevsky V.M., Mozdor E.V., Padalko V.I.** *Superhard Materials.* 2002. No. 6. // ЭПР субмикро- и наноразмерных синтетических алмазов. **Маевский В.М., Моздор Е.В., Падалко В.И.** *Сверхтвердые материалы.* 2002. № 6. С. 43-50.

232 Temperature dependence of electroresistivity, negative and positive magnetoresistivity of carbon nanoparticles. **Romanenko A.I., Anikeeva O.B., Okotrub A.V., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Dong C., Ni Y.** *Mat. Res. Sym. Proc.* 2002. Vol. 703, P. 259-264.

233 Electrical resistivity of graphitized ultra-disperse diamond and onion-like carbon. **Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Romanenko A.I., Okotrub A.V.** *Chem. Phys. Lett.* 2001. Vol. 336, P. 397-404.

234 Endo-fullerene and doped diamond nanocrystallite-based models of qubits for solid-state quantum computers. **Park S., Srivastava D., Cho K.** *J. Nanoscience and Nanotech.* 2001. Vol. 1, P. 75.

235 Microscopic field emission investigation of nanodiamond and AlN coated Si tips. **Günther B., Göhl A., Müller G., Givargizov E., Zadorozhnaya L., Stepanova A., Spitsyn B., Blaut-Bachev A.N., Seleznev B., Suetin N.** *J. Vac. Sci. Technol. B.* 2001. Vol. 19, P. 942-945.

236 Paramagnetic properties of nanodiamond. **Belobrov P.I., Gordeev S.K., Petrakovskaya E.A., Falaleev O.V.** *Doklady Physics.* 2001. Vol. 46, No. 7, P. 459-462.

237 Electron transport and electron field emission of nanodiamond synthesized by explosive detonation. **He D., Shao L., Gong W., Xie E., Xu K., Chen G.** *Diamond Rel. Mater.* 2000. Vol. 9, No. 9-10, P.1600-1603.

238 Comment on "Quantum confinement effect in diamond nanocrystals studied spectroscopy". **Ley L., Ristein J., Graupner R.** *Phys. Rev. Lett.* 2000. Vol. 84, No. 24, P. 5679.

239 Electronic properties of nanocrystalline layers of wide-band-gap materials. **Szmidt J.** *Chaos, Solitons, & Fractals.* 1999. Vol. 10, No. 12, P. 2099-2152.

240 Plasmon excitations in small diamond spheres by fast penetrating electrons. **Fehlhaber R.P., Bursill L.A.** *Phys. Rev. B.* 1999. Vol. 60, No. 20, P. 14147-14153.

241 Role of the curvature of atomic layers in electron field emission from graphitic nanostructured carbon. **Obraztsov A.N., Volkov A.P., Pavlovsky I.Yu., Chuvilin A.L., Rudina N.A., Kuznetsov V.L.** *JETP Lett.* 1999. Vol. 69, No. 5, P. 411-417.

242 Quantum confinement effect in diamond nanocrystals studied by X-ray-absorption spectroscopy. **Chang Y.K., Hsieh H.H., Pong W.F., Tsai M.-H., Chien F.Z., Tseng P.K., Chen L.C., Wang T.Y., Chen K.H., Bhusari D.M., Yang J.R., Lin S.T.** *Phys. Rev. Lett.* 1999. Vol. 82, No. 26, P. 5377-5380.

243 Band gaps in diamond-graphite hybrids. **Sen R., Sumathy R., Rao C.N.R.** *J. Mater. Res.* 1996. Vol. 11, No. 12, P. 2961-2963.

244 Diamond-graphite hybrids and the nature of amorphous carbon and diamond-like carbon. **Sen R., Sumathy R., Rao C.N.R.** *J. Mater. Res.* 1995. Vol. 10, No. 10, P. 2531-2535.

See also **143, 201, 212, 216, 248, 250, 256, 284, 285, 302, 313, 325, 338, 339, 340, 341, 343, 357, 364, 367, 371, 406, 422, 474, 475, 485, 523, 529, 531, 609**

05. Modification of nanodiamond surface

➢ 05.01.Properties of nanodiamond surface

245 Adatoms and nanoengineering of carbon. **Ewels C.P., Heggie M.I., Briddon P.R.** *Chem. Phys. Lett.* 2002. Vol. 351, No. 3-4, P. 178-182.

246 Adsorption and catalytic processes on the surface of nanodispersed diamonds. **Bogatyreva G.P., Marinich M.A., Ishchenko E.V., Gvyazdovskaya V.L., Bazaly G.A.** *Superhard Materials.* 2002. No. 6. // Адсорбционные и каталитические процессы на поверхности нанодисперсных алмазов. **Богатырева Г.П., Маринич М.А., Ищенко Е.В., Гвяздовская В.Л., Базалий Г.А.** *Сверхтвердые материалы.* 2002. № 6, С. 10-15.

247 Chemical state of carbon atoms on ultradispersed diamond and natural diamond surfaces before and after *in-situ* H- treatment. **Dementjev A.P., Maslakov K.I., Zabusov O.O.** *New Diamond Front. Carbon Technol.* 2002. Vol. 12, No. 1, P. 11-24.

248 Defects and impurities in nanodiamonds: EPR, NMR and TEM study. **Shames A.I., Panich A.M., Kempiński W., Aleksenskii A.E., Baidakova M.V., Dideikin A.T., Osipov V.Yu., Siklitsky V.I., Osawa E., Ozawa M., Vul'A.Ya.** *J. Phys. Chem. Sol.* 2002. Vol. 63, No. 11, P. 1993-2001.

249 Nanostructured porous diamond powders and properties of their surface. **Novikov N.V., Bogatyreva G.P., Voloshin M.N., Marinich M.A., Padalko V.I., Slavinsky Yu.S.** *Superhard Materials.* 2002. No. 6. // Наноструктурные пористые алмазные порошки и их поверхностные свойства. **Новиков Н.В., Богатырева Г.П., Волошин М.Н., Маринич М.А., Падалко В.И., Славинский Ю.С.** *Сверхтвердые материалы.* 2002. № 6, С. 4-9.

250 Surface bonding state of nano-crystalline diamond balls. **Peng J.L., Bulcock S., Belobrov P.I., Bursill L.A.** *Intern. J. Mod. Phys. B.* 2001. Vol. 15, No. 31., P. 4071-4085.

251 Chemical properties of detonation-synthesized ultradispersed diamond. **Kulakova I.I., Gubarevich T.M., Dolmatov V.Yu., Rudenko A.P.** *Superhard Materials.* 2000. No. 1, P. 42-48. // Химические свойства ультрадисперсных детонационных алмазов. **Кулакова И.И., Губаревич Т.М., Долматов В.Ю., Руденко А.П.** *Сверхтвердые материалы.* 2000. № 1, С. 46-53.

252 Physicochemical properties of dynamically synthesized diamonds. **Nozhkina A.V., Kolchemanov N.A., Kardanov A.A., Detkov P.Ya.** *Superhard Materials.* 2000. No. 1, P. 73-77. // Физико-химические свойства алмазов динамического синтеза. **Ножкина А.В., Колчеманов Н.А., Карданов А.А., Детков П.Я.** *Сверхтвердые материалы.* 2000. № 1, С. 78-84.

253 Sorption activity of nanodiamonds with respect to cesium. **Chukhaeva S.I., Cheburina L.A.** *Superhard Materials.* 2000. No. 2, P. 39-43. // Сорбционная активность наноалмазов по цезию. **Чухаева С.И., Чебурина Л.А.** *Сверхтвердые материалы.* 2000. № 2, С. 43-48.

254 The effect of heat treatment on the surface condition of nanodiamond **Bogatyreva G.P., Voloshin M.M., Malogolovets V.G., Gvyazdovskaya V.L., Ilnitskaya G.D.** *J. Optoelectr.Adv. Mater.* 2000. Vol. 2, No. 5, P. 469-473.

255 Surface and electrochemical properties of dynamically synthesized nanodiamond. **Bogatyreva G.P., Voloshin M.N., Marinich M.A., Malogolovets V.G., Gvyazdovskaya V.L., Gavrilova V.S.** *Superhard Materials.* 1999. No. 6. P. 41-44. // Поверхностные и электрохимические свойства наноалмаза динамического синтеза. **Богатырева Г.П., Волошин М.Н., Маринич М.А., Малоголовец В.Г., Гвяздовская В.Л., Гаврилова В.С.** *Сверхтвердые материалы.* 1999. № 6, С. 42-46.

256 On the nature of grain boundaries in nanocrystalline diamond. **Keblinski P., Wolf D., Cleri F., Phillpot S.R., Gleiter H.** *MRS Bulletin.* 1998. Vol. 23, No. 9, P. 36-41.

257 Physicochemical properties of fractions isolated from ultradispersed diamonds. **Chukhaeva S.I., Detkov P.Ya., Tkachenko A.P., Toropov A.D.** *Superhard Materials.* 1998. No. 4, P. 29-35.

258 Study on the tribological properties of ultradispersed diamond containing soot as an oil additive. **Xu T., Zhao J., Xue Q.** *Tribol. Trans.* 1997. Vol. 40, No. 1, P. 178.

259 Graphitization of diamond (111) studied by first principles molecular dynamics. **DeVita A., Galli G., Canning A., Car R.** *Appl. Surf. Sci.* 1996. Vol. 104, P. 297-303.

260 Diamond (111) surface. **Iarlori S., Galli G., Gygi F., Parrinello M., Tosatti E.** *Physica B.* 1993. Vol. 185, P. 539-541.

261 A study of the surface composition of diamond-like carbon. **Petrova L.A., Vereschagin A.L., Novosyolov V.V., Brylyakov P.M., Shein N.V.** *Superhard Materials.* 1989. No. 4, P. 3-5. // Исследование состава поверхностных групп алмазоподобной фазы углерода. **Петрова Л.А., Верещагин А.Л., Новоселов В.В., Брыляков П.М., Шеин Н.В.** *Сверхтвёрдые материалы.* 1989. № 4, С. 3-5.

See also **139, 141, 165, 178, 181, 192, 196, 218, 221, 223, 259, 262, 285, 308, 316, 470, 500, 510, 543, 578**

➢ 05.02 Chemical modification of surface

262 On the physics and chemistry of the diamond surface. **Spitsyn B.V., Kulakova I.I.** Problemy i dostizheniya fiziko-khimicheskoj i inzhenernoj nauki v oblasti nanomaterialov (Mezhd. shkola povysheniya kvalifikatsii "Inzhenerno-khimicheskaya nauka dlya peredovyh tehnologij, VII sessiya"). 2002, Moscow: "FTI im. Karpova". Vol. 2, P. 101-123 (in Russian). // К физико-химии поверхности алмаза. **Спицын Б.В., Кулакова И.И.** Проблемы и достижения физико-химической и инженерной науки в области наноматериалов (Межд. школа повышения квалификации "Инженерно-химическая наука для передовых технологий, VII сессия"). 2002, М.: "ФТИ им. Карпова" Т. 2, С. 101-123.

263 Peculiarities of the heat cotreatment of UDD and non-diamond carbon under different p, T-conditions. **Senyut' V.T.** *Superhard Materials.* 2002. No. 6. // Особенности совместной термообработки УДА и неалмазного углерода при различных p, T-условиях. **Сенють В.Т.** *Сверхтвердые материалы.* 2002. № 6, С. 68-77.

264 Surface modification on hydrogenated diamond powder by radical reactions in chloroform solutions. **Tsubota T., Urabe K., Egawa S., Takagi H., Kusakabe K., Morooka S., Maeda H.** *Diamond Relat. Mater.* 2000. Vol. 9, No. 2, P. 219-223.

265 Incorporation of butyl groups into chlorinated diamond surface carbons by organic reactions at ambient temperature. **Saito T., Ikeda Y., Egawa S., Kusakabe K., Morooka S.** *J. Chem. Soc. Faraday Trans.* 1998. Vol. 94, No. 7, P. 929-932.

266 Effect of gas desorption on the structure and properties of polycrystals sintered from nanometric diamond powders. **Shulzhenko A.A., Bochechka A.A., Gargin V.G., Gontar A.G., Romanko L.A., Tkach V.N.** *Superhard Materials.* 1998. No. 4, P. 46-52.

267 Laser-induced intracluster reactions of oxygen-containing nanodiamonds. **Lin R.-W., Cheng C.-L., Chang H.-C.** *Chem. Mater.* 1998. Vol. 10, No. 7, P. 1735 -1737.

268 Reaction of ultrafine diamond powder with titanium. **Chiganov A.S., Chiganova G.A.** *Inorg. Mater.* 1997. Vol. 33, No. 10, P. 1036-1038.

See also **172, 221, 246, 247, 248, 251, 254, 257, 261, 274, 277, 310, 314, 410, 411, 414, 415, 426, 429, 431, 434, 438**

➢ 05.03. Aggregation (assemblies) of nanodiamonds

269 Aggregation of particles in ultradispersed diamond hydrosols. **Chiganova G.A.** *Colloid J.* 2000. Vol. 62, No. 2, P. 238-243.

270 Shock-induced coalescence of diamond nanoparticles. **Lin E.E.** *Izv. Akad. Nauk. Fiz.* 2000. Vol. 64, No. 8, P. 1519-1521.

271 Ultradisperse diamond cluster aggregation studied by atomic force microscopy. **Aleksenskii A.E., Osipov V.Yu., Dideikin A.T., Vul' A.Ya., Adriaenssens G.J., Afanas'ev V.V.** *Techn. Phys. Lett.* 2000. Vol. 26, No. 9, P. 819-821.

See also **190, 273, 274, 277, 279, 427**

➢ 05.04 Suspension of nanodiamonds

272 Formation and stabilization of nanodiamond suspensions in liquid media. **Voznyakovskii A.P., Fujimura T., Dolmatov V.Yu., Veretennikova M.V.** *Superhard Materials.* 2002. No. 6. // Формирование и стабилизация суспензий наноалмазов в жидких средах. **Возняковский А.П., Фуджимура Т., Долматов В.Ю., Веретенникова М.В.** *Сверхтвердые материалы.* 2002. № 6, С. 22-27.

273 Sedimentation stability of nanodiamond suspensions in aqueous media. **Bogatyreva G.P., Voloshin M.N., Shamraeva V.S.** *Superhard Materials.* 2002. No. 4. P. 52-57. // Седиментационная устойчивость суспензий наноалмаза в водных средах. **Богатырева Г.П., Волошин М.Н., Шамраева В.С.** *Сверхтвердые материалы.* 2002. № 4, С. 55-60.

274 Structure and sedimentation stability of suspensions of detonation-synthesized nanodiamonds in nonaqueous liquids. **Voznyakovskii A.P., Klyubin V.V., Dolmatov V.Yu., Agibalova L.V.** *Superhard Materials.* 2000. No. 2, P. 58-65. // Структура и седиментационная устойчивость суспензий наноалмазов детонационного синтеза в неводных жидких средах. **Возняковский А.П., Клюбин В.В., Долматов В.Ю., Агибалова Л.В.** *Сверхтвердые материалы.* 2000. № 2, С. 64-71.

275 Nanophase films deposited from organic suspensions of ultradispersed diamond. **Adrianova T.N., Zakharov A.A.** *Colloid J.* 1999. Vol. 61, No. 3, P. 265-267.

276 Structure of suspensions of explosion-synthesized ultradispersed diamonds (nanodiamonds). **Agibalova L.V., Voznyakovskii A.P., Dolmatov V.Yu., Klyubin V.V.** *Superhard Materials.* 1998. No. 4, P. 79-87. // Структура суспензий ультрадисперсных алмазов взрывного синтеза (наноалмазов). **Агибалова Л.В., Возняковский А.П., Долматов В.Ю., Клюбин В.В.** *Сверхтвердые материалы.* 1998. № 4,С. 87-95.

277 The effect of particle hydration on the aggregation stability of ultradispersed diamond hydrosols **Chiganova G.A.** *Colloid J.* 1997. Vol. 59, No. 1, P. 87-89.

278 Studies on nanodiamond pastes. **Guseva M.B., Babaev V.G., Hvostov V.V., Valiullova Z.Kh.** *Izv. Ross. Akad. Nauk. Fiz.* 1994. Vol. 58, No. 1, P. 191-194. // Исследования ультрадисперсных алмазных паст. **Гусева М.Б., Бабаев В.Г., Хвостов В.В., Валиуллова З.Х.** *Изв. Акад. Наук, Сер. Физ.* 1994. Т. 58, № 1, С. 191-194.

279 Sedimentation and reological studies of the fractal structure of ultradisperse diamond aggregates. **Ignatchenko A.V., Smagina G.F., Solohina A.B., Besedina O.A., Idrisov I.G.** *Kolloidnyj Zhurnal.* 1992. Vol. 54, No. 4, P. 55-58 (in Russian). // Исследование фрактальной структуры агрегатов ультрадисперсных алмазов методом седиментации и реологии. **Игнатченко А.В., Смагина Г.Ф., Солохина А.Б., Беседина О.А., Идрисов И.Г.** *Коллоидный журнал.* 1992. Т. 54, № 4, С. 55-58.

280 Aggregation of diamonds produced in explosion. **Sakovich G.V., Gubarevich V.D., Badaev F.Z., Brylyakov P.M., Besedina O.A.** *Dokl. Akad. Nauk USSR.* 1990. Vol. 310, No. 2, P. 402-404 (in Russian). // Агрегация алмазов, полученных из взрывчатых веществ. **Сакович Г.В., Губаревич В.Д., Бадаев Ф.З., Брыляков П.М., Беседина О.А.** *Докл. АН СССР.* 1990. Т. 310, № 2, С. 402-404.

See also **089, 211, 219, 269, 271, 275, 611, 614, 617, 624, 629**

■ 05.04.01. Electrophoretic deposition of nanodiamonds

281 Theory of electrodeposition of diamond nanoparticles. **Bilbro G.L.** *Diamond Relat. Mater.* 2002. Vol. 11, P. 1572-1577.

282 Codeposition of nanodiamonds with chromium. **Mandich N.V., Dennis J.K.** *Metal Finishing.* 2001. Vol. 99, No. 6, P. 117-119.

283 Electrophoretic deposition of nano-sized diamond particles. **Affoune M., Prasad B.L.V., Sato H., Enoki T.** *Langmuir.* 2001. Vol. 17, No. 2, P. 547-551.

284 Electrophoresis of nanodiamond powder for cold cathode fabrication. **Alimova A.N., Chubun N.N., Belobrov P.I., Detkov P.Y., Zhirnov V.V.** *J. Vac. Sci. Technol. B.* 1999. Vol. 17, No. 2, P. 715-718.

285 Surface properties of nanodiamond films deposited by electrophoresis on Si(100). **Maillard-Schaller E., Kuettel O.M., Diederich L., Schlapbach L., Zhirnov V.V., Belobrov P.I.** *Diamond Relat. Mater.* 1999. Vol. 8, P. 805-808.

06. Experimental methods for investigation of nanodiamonds

➢ 06.01. X-ray diffraction

286 X-ray diffraction study on nanometric diamond obtained from detonation soot. **Chen Q., Yun S.R., Huang F.L.** *Chin. J. Mater. Res.* 1999. Vol. 13, No. 3, P. 317-319.

See also **180, 181, 183, 184, 204, 512**

➢ 06.02. Small angle X-ray scattering

287 Formation of fractal structures at explosion. **Ershov A.P., Kupershtokh A.L.** *Fiz. Goren. Vzryva.* 1991. Vol. 27, No. 2, P. 111-117 (in Russian). // Образоване фрактальных структур при взрыве. **Ершов А.П., Куперштох А.Л.** *Физика горения и взрыва.* 1991. Т. 27, № 26 С. 111-117.

See also **180, 183, 184, 204**

➢ 06.03. Raman scattering

288 Nature of confinement of phonons in nanocrystalline CVD diamond. **Arora A.K., Ravindran T.R., Reddy G.L.N., Sikder A.K., Misra D.S.** *Diamond. Relat. Mater.* 2001. Vol. 10, No. 8, P. 1477-1485.

289 Raman scattering of ultrafine diamond obtained from detonation. **Chen P.W., Yun S.R., Huang F.L. et al.** *Chin. J. High Pressure Phys.* 1999. Vol. 13, No. 1, P. 59-63.

290 The Raman spectrum of amorphous diamond. **Nugent K.W., Jamieson D.N., Prawer S.** *Diamond Relat. Mater.* 1998. Vol. 7, No. 1, P. 106-110.

291 Nanocrystalline diamond: Effect of confinement, pressure, and heating on phonon modes. **Lipp M.J., Baonza V.G., Evans W.J., Lorenzana H.E.** *Phys. Rev. B.* 1997. Vol. 56, No. 10, P. 5978-5984.

292 Characterization of diamond thin films by core-level photoabsorption and UV excitation Raman spectroscopy. **Zuiker C.D., Krauss A.R., Gruen D.M., Carlisle J.A., Terminello L.J., Asher S.A., Bormett R.W.** *Mat. Res. Soc. Symp. Proc.* 1996. Vol. 437, P. 211-218.

293 Raman scattering of light in small crystals. **Gorelik V.S., Igo A.V., Mikov S.N.** *J. Exper. Theor. Phys.* 1996. Vol. 82, No. 6, P. 1154-1158.

294 Raman scattering from diamond particles. **Yoshikawa M., Mori Y., Maegawa M., Katagiri G., Ishida H., Ishitani A.** *Appl. Phys. Lett.* 1993. Vol. 62, No. 24, P. 3114-3116.

295 Raman scattering from sp2 carbon clusters. **Yoshikawa M., Nagai N., Matsuki M., Fukuda H., Katagiri G., Ishida H., Ishitani A.** *Phys. Rev. B.* 1992. Vol. 46, No. 11, P. 7169-7174.

See also **205, 211, 214, 224, 225, 349, 362, 547, 548, 560**

➢ 06.04. Electron microscopy

296 Single-particle mass spectrometry of polystyrene microspheres and diamond nanocrystals. **Cai Y., Peng W.-P., Kuo S.-J., Lee Y.T., Chang H.-C.** *Anal. Chem.* 2002. Vol. 74, No. 1, P. 232-238.

297 Analysis of nanocrystalline diamond powder by scanning transmission electron microscopy. **Peng J.L., Fehlhaber R.P., Bursill L.A., McCulloch D.G.** *J. Appl. Phys.* 2001. Vol. 89, No. 11, P. 6204-6213.

298 TEM and HREM studies on ultradispersed diamonds containing soot formed by explosive detonation. **Tao X., Kang X., Jiazheng Z.** *Mater. Sci. Eng. B.* 1996. Vol. 38, No. 1-2, P. L1-L4.

299 Characterization of diamond thin films using transmission electron microscopy. **Csencsits R., Gruen D.M., Krauss A.R., Zuiker C.** *SPIE.* 1995. Vol. 2622, P. 405-406.

See also **376, 515, 517, 594**

➢ 06.05. Other methods for characterization of nanodiamonds

300 Electron spectroscopy characterization of carbon surfaces. **Dementjev P.** *New Diamond Front. Carbon Technol.* 2001. Vol. 11, No. 1, P. 37-51.

301 Methods of research of the detonation and shock wave processes with the help of SR. Possibilities and prospects. **Aleshaev A.N., Batrakov A.M., Fedotov M.G., Kulipanov G.N., Luckjanchikov L.A., Ljachov N.Z., Mishnev S.I., Sheromov M.A., Ten K.A., Titov V.M., Tolochko B.P., Zubkov P.I.** *Nucl. Instrum. Methods A.* 2001. Vol. 470, P. 240-244.

302 X-ray emission studies of valence band of nanodiamonds annealed at different temperatures. **Okotrub A.V., Bulusheva L.G., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Heggie M.I.** *J. Chem. Phys. A.* 2001. Vol. 105, P. 9781-9787.

303 ^{13}C NMR characterization of nanodiamonds. **Donnet J.-B., Fousson E., Delmotte L., Samirant M., Baras C., Wang T.K., Eckhardt A.** *Comptes Rendus de l'Académie des Sciences - Series IIC - Chemistry.* 2000. Vol. 3, No. 11-12. P. 831-838.

304 Photoacoustic spectroscopy of diamond powders and polycrystalline films. **Obraztsov A.N, Okushi X, Vatanabe X., Pavlovsky I.Yu.** *Fizika Tverdogo Tela.* 1997. Vol. 39, No. 10, P. 1787-1791. // Фотоакустическая спектроскопия алмазных порошков и поликристаллических пленок. **Образцов А.Н, Окуши Х, Ватанабе Х., Павловский И.Ю.** *Физика Твердого Тела.* 1997. Т. 39, No. 10, С. 1787-1791.

305 Characterization of nanocrystalline diamond films by core-level photoabsorption. **Gruen D.M., Krauss A.R., Zuiker C.D., Csencsits R., Terminello L.J., Carlisle J.A., Jimenez I., Sutherland D.G.J., Shuh D.K., Tong W., Himpsel F.** *J. Appl. Phys. Lett.* 1996. Vol. 68, No. 12, P. 1640-1642.

306 Near-edge x-ray absorption of carbon materials for determining bond hybridization in mixed sp2/sp3 bonded materials **Coffman F.L., Cao R., Pianetta P.A., Kapoor S., Kelly M., Terminello L.J.** *Appl. Phys. Lett.* 1996. Vol. 69, P. 568-579.

307 NMR spectroscopy of diamond-like phase of carbon of detonation synthesis. **Mastikhin V.M., Vereshchagin A.L.** Superdisperse Powders, Materials, and Nanostructures, Krasnoyarsk: 1996. P. 37-38.

308 Diffuse reflectance infrared Fourier-transform study of the direct thermal fluorination of diamond powder surfaces. **Ando T., Yamamoto K., Kamo M., Sato Y., Takamatsu Y.** *J. Chem. Soc. Faraday Trans.* 1995. Vol. 91, No. 18, P. 3209-3212.

See also **019, 092, 172, 181, 188, 209, 210, 215, 217, 220, 228, 231, 236, 238, 241, 242, 248, 271, 279, 313, 316, 321, 349, 356, 358, 390, 396, 432, 518, 540, 545, 580, 587**

0.7 Impurities and structural defects in nanodiamonds

309 Dopants in diamond nanoparticles and bulk diamond density functional study of substitutional B, N, P, SB, S, PN, O, NN, and interstitial H. **Albu T.V., Anderson A.B., Angus J.C.** *J. Electrochem. Soc.* 2002. Vol. 149, No. 5, P. E143-E147.

310 Grain-size distribution of activated and metal-coated ultradispersed diamond powders. **Duda T.M., Tkach V.N., Kuzmenko E.F.** *Superhard Materials.* 2001. No. 4, P. 57-61. // Зерновой состав активированных и металлизированных ультрадисперсных алмазных порошков. **Дуда Т.М., Ткач В.Н., Кузьменко Е.Ф.** *Сверхтвердые материалы.* 2001. № 4, С. 63-67.

311 Molecular dynamics simulation of impurities in nanocrystalline diamond grain boundaries. **Sternberg M., Zapol P., Frauenheim T., Gruen D.M., Curtiss L.A.** *Mat. Res. Soc. Symp. Proc.* 2000. Vol. 593, P. 483-487.

312 First-principles study of π-bonded (100) planar defects in diamond. **Zapol P., Curtiss L.A., Gruen D.M.** *Mat. Res. Soc. Symp. Proc.* 1999. Vol. 538, P. 371-376.

313 Study of defects in CVD and ultradisperse diamond. **Iakoubovskii K., Adriaenssens G.J., Meykens K., Nesladek M., Vul' A.Y., Osipov V.Y.** *Diam. Rel. Mater.* 1999. Vol. 8, No. 8-9, P. 1476-1479.

314 Formation of the surface composition of nanometric diamond. **Smekhnov A.A.** *Superhard Materials.* 1998. No. 1, P. 29-33. // Формирование состава поверхности ультрадисперсных алмазов. **Смехнов А.А.** *Сверхтвердые материалы.* 1998. № 1, С. 33.

315 On possible doping of ultradisperse diamonds. **Lin E.E., Dubitskii G.A., Zul'kova T.V., Mazanov V.A., Sirenko A.V., Suharenko V.I.** *Khim. Fizika.* 1997. Vol. 16, No. 3, P. 142-143 (in Russian). // О возможности легирования ультрадисперсных алмазов. **Лин Э.Э., Дубицкий Г.А., Зюлькова Т.В., Мазанов В.А., Сиренко А.В., Сухаренко В.И.** *Химическая физика.* 1997. Т. 16, № 3, С. 142-143.

316 Use of the technique of chemical decomposition in analyzing the impurity distribution in ultrafine diamonds. **Chiganova G.A.** *J. Anal. Chem.* (Transl. of *Zh. Anal. Khim.)* 1995. Vol. 50, No. 12, P. 1195-1197.

317 Study of the impurity composition of ultradisperse diamond. **Gubarevich T.M., Kostyukova N.M., Sataeva R.R., Fomina L.V.** *Superhard Materials.* 1991. No. 5, P. 31-34. // Исследование микропримесного состава ультрадисперсного алмаза. **Губаревич Т.М., Костюкова Н.М., Сатаев Р.Р., Фомина Л.В.** *Сверхтвердые материалы.* 1991. No. 5, С. 31-34.

See also **075, 141, 154, 181, 218, 221, 248, 253, 256, 267, 268, 350, 351, 390, 414, 549, 580, 587, 637**

➢ 0.8 Nanodiamond films by CVD

318 Elastic, mechanical, and thermal properties of nanocrystalline diamond films. **Philip J., Hess P., Feygelson T., Butler J.E., Chattopadhyay S., Chen K.H., Chen L.C.** *J. Appl. Phys.* 2003. Vol. 93, No. 4, P. 2164-2171.

319 Nanodiamond thin film electrodes: Metal electro-deposition and stripping processes, **Hian L.C., Grehan K.J., Goeting C.H., Compton R.G., Foord J.S., Marken F.** *Electroanalysis.* 2003. Vol. 15, No. 3, P. 169-174.

320 Nanodiamond thin films on titanium substrates. **Hian L.C., Grehan K.J., Compton R.G., Foord J.S., Marken F.** *J. Electrochem. Soc.* 2003. Vol. 150, No. 1, P. E59-E65.

321 Optical properties of nanocrystalline diamond films by prism coupling technique. **Sharda T., Soga T., Jimbo T.** *J. Appl. Phys.* 2003. Vol. 93, No. 1, P. 101-105.

322 Synthesis and characterization of sulfur-incorporated microcrystalline diamond and nanocrystalline carbon thin films by hot filament chemical vapor deposition. **Gupta S., Weiner B.R., Morell G.** *J. Mater. Res.* 2003. Vol. 18, No. 2, P. 363-381.

323 Allotropic conversion of carbon-related films by using energy beams. **Naramoto H., Zhu X., Xu Y., Narumi K., Vacik J., Yamamoto S., Miyashita K.** *Phys. Solid State.* 2002. Vol. 44, No. 4, P. 668-673.

324 Formation of diamond and nanocrystalline diamond films by microwave plasma CVD. **Hiramatsu M., Lau C.H., Bennett A., Foord J.S.** *Thin Sol. Films.* 2002. Vol. 407, No. 1-2, P. 18-25.

325 Growth and electron field emission characteristics of nanodiamond films deposited in $N_2/CH_4/H_2$ microwave plasma-enhanced chemical vapor deposition. **Wang S.G., Zhang Q., Yoon S.F., Ahn J., Wang Q., Zhou Q., Yang D.J.** *J. Vac. Sci. Techn. B.* 2002. Vol. 20, No. 5, P. 1982-1986.

326 Highly transparent nanocrystalline diamond films on quartz substrates. **Qiu D.J., Shi C.R., Wu H.Z.** *Acta Phys. Sin.-Ch. Ed.* 2002. Vol. 51, No. 8, P. 1870-1874.

327 Influence of cluster-assembly parameters on the field emission properties of nanostructured carbon films. **Ducati C., Barborini E., Piseri P., Milani P., Robertson J.** *J. Appl. Phys.* 2002. Vol. 92, No. 9, P. 5482-5489.

328 Influence of nitrogen ion implantation on tribological properties of nanocrystalline diamond films. **Xu T., Yang S.R., Chen M., Tian J., Xue Q.J., Li J.Q., Guo W.T.** *J. Phys. D Appl. Phys.* 2002. Vol. 35, No. 8, P. 788-793.

329 Investigations of the electron field emission properties and microstructure correlation in sulfur-incorporated nanocrystalline carbon thin films **Gupta S., Weiner B.R., Morell G.** *J. Appl. Phys.* 2002. Vol. 91, No. 12, P. 10088-10097.

330 Microstructure and stress in nano-crystalline diamond films deposited by DC glow discharge CVD. **Heiman A., Lakin E., Zolotoyabko E., Hoffman A.** *Diamond Relat. Mater.* 2002. Vol. 11, No. 3-6, P. 601-607.

331 Morphology and electronic structure in nitrogen-doped ultrananocrystalline diamond. **Birrell J., Carlisle J.A., Auciello O., Gruen D.M., Gibson J.M.** *Appl. Phys. Lett.* 2002. Vol. 81, No. 12, P. 2235-2237.

332 Nanocrystalline diamond thin films deposited by 35 kHz Ar-rich plasmas. **Lopez J.M., Gordillo-Vazquez F.J., Albella J.M.** *Appl. Surf. Sci.* 2002. Vol. 185, P. 321-325.

333 Nanocrystalline diamond thin films as infrared optical protective coatings. **Li J.Q., He D.Y., Guo W.T., Zhang J.H., Sun Y.N., Lei Q.S., Gao X.** *Int. J. Mod. Phys B.* 2002. Vol. 16, No. 6-7, P. 1013-1017.

334 Nanodiamond formation by hot-filament chemical vapor deposition on carbon ions bombarded Si. **Liao M.Y., Meng X.M., Zhou X.T., Hu J.Q., Wang Z.G.** *J. Cryst. Growth.* 2002. Vol. 236, No. 1-3, P. 85-89.

335 Substrate bias effect on the formation of nanocrystalline diamond films by microwave plasma-enhanced chemical vapor deposition. **Yang T.S., Lai J.Y., Wong M.S., Cheng C.L.** *J. Appl. Phys.* 2002. Vol. 92, No. 4, P. 2133-2138.

336 Synthesis and structural study of nano/micro diamond overlayer films. **Jiang N., Sugimoto K., Nishimura K., Shintani Y., Hiraki A.** *J. Cryst. Growth.* 2002. Vol. 242, No. 3-4, P. 362-366.

337 Synthesis of nanocrystalline diamond film using CH_4/H_2 microwave plasma. **Hong S.P., Yoshikawa H., Koga Y.** *New Diamond Front. Carbon Technol.* 2002. Vol. 12, No. 3, P. 129-132.

338 The effect of nitrogen addition to Ar/CH_4 plasmas on the growth, morphology and field emission of ultrananocrystalline diamond. **Corrigan T.D., Gruen D.M., Krauss A.R., Zapol P., Chang R.P.H.** *Diamond Relat. Mater.* 2002, Vol. 11, P. 43-48.

339 Electron field emission for ultrananocrystalline diamond films. **Krauss R., Auciello O., Ding M.Q., Gruen D.M., Huang Y., Zhirnov V.V., Givargizov E.I., Breskin A., Chechen R., Shefer E., Konov V., Pimenov S., Karabutov A., Rakhimov A., Suetin N.** *J. Appl. Phys.* 2001. Vol. 89, P. 2958-2067.

340 Electron field emission from nanostructured diamond and carbon nanotubes. **Zhu W., Bower C., Kochanski G.P., Jin S.** *Sol. State Electron.* 2001. Vol. 45, No. 6, P. 921-928.

341 Electron field emission properties of nanodiamonds synthesized by the chemical vapor deposition process. **Yu Y.-C., Huang J.-H., Lin I-N.** *J. Vac. Sci. Technol. B.* 2001. Vol. 19, P. 975-979.

342 Evolution and properties of nanodiamond films deposited by direct current glow discharge. **Heiman A., Gouzman I., Christiansen S.H., Strunk H.P., Comtet G., Hellner L., Dujardin G., Edrei R., Hoffman A.** *J. Appl. Phys.* 2001, Vol. 89, No. 5, P. 2622-2630.

343 Field emission from nanostructured carbon films on Si tips. **Wang W.-L., Liao K.-J., Hu Ch.-G., Fang L.** *Chin. Phys. Letters.* 2001. Vol. 18, P. 1132-1134.

344 Growth of highly transparent nanocrystalline diamond films and a spectroscopic study of the growth. **Chen L.C., Kichambare P D., Chen K.H., Wu J.-J., Yang J.R., Lin S.T.** *J. Appl. Phys.* 2001. Vol. 89, No. 1, P. 753-759.

345 Mechanism of nanodiamond film formation by stress relaxation on a preferentially oriented vertical basal plane graphitic precursor. **Hoffman A., Heiman A., Christiansen S.H.** *J. Appl. Phys.* 2001. Vol. 89, No. 10, P. 5769-5773.

346 Microstructure of ultrananocrystalline diamond films grown by microwave Ar-CH_4 plasma chemical vapor deposition with or without added H_2. **Jiao S., Sumant A., Kirk M.A., Gruen D.M., Krauss A.R., Auciello O.** *J. Appl. Phys.* 2001. Vol. 90, P. 118-122.

347 Nitrogen-doped ultrananocrystalline diamond films exhibit high room-temperature n-type conductivity. **Sosa S.S.** *MRS. Bull.* 2001. Vol. 26, No. 9, P. 659-659.

348 Phase transformation of diamond films during electron field emission. **Sun Z., Chen J.S., Li Y.J., Tay B.K., Lau S.P., Chen G.Y.** *Appl. Surf. Sci.* 2001. Vol. 173, No. 3-4, P. 282-289.

349 Raman and EELS studies on nanocrystalline diamond prepared in a low pressure inductively coupled plasma. **Okada K., Kimoto K., Komatsu S., Matsumoto S.** *Mat. Res. Soc. Proc.* 2001. Vol. 675, W12.7.1-6.

350 Synthesis and characterization of highly-conducting nitrogen-doped ultrananocrystalline diamond films. **Bhattacharyya S., Auciello O., Birrell J., Carlisle J.A., Curtiss L.A., Goyette A.N., Gruen D.M., Krauss R., Schlueter J., Sumant A., Zapol P.** *Appl. Phys. Lett.* 2001. Vol. 79, No. 10, P. 1441-1443.

351 The structure and electrochemical behavior of nitrogen-containing nano-crystalline diamond films deposited from $CH_4/N_2/Ar$ mixtures. **Chen Q., Gruen D.M., Krauss A.R., Corrigan T.D., Witck M., Swain G.M.** *J. Electrochem. Soc.* 2001. Vol. 148, No. 1, P. E44-E51.

352 Ultracrystalline diamond in the laboratory and the cosmos. **Gruen D.M.** *MRS Bulletin.* 2001. Vol. 26, No. 20, P. 771-776.

353 Ultrananocrystalline diamond thin films for mems and moving mechanical assembly devices. **Krauss R., Auciello O., Gruen D.M., Jayatissa A., Sumant A., Tucek J., Mancini D.C., Moldovan N., Erdemir A., Ersoy D., Gardos M.N., Busmann H.G., Meyer E.M., Ding M.Q.** *Diamond Related Mater.* 2001. Vol. 10. P. 1952-1961.

354 Autoemission cathodes (cold emitters) on nanocrystalline carbon and nanodiamond films: physics, technology, applications. **Rakhimov T.** *Physics-Uspekhi*. 2000. Vol. 43, No. 9. P. 926-929. [English edition of *Usp. Fiz. Nauk.* 2000. Vol. 170. No. 9, P. 996-999].

355 Diamond nucleation enhancement by direct low-energy ion-beam deposition. **Zhang W.J., Sun X.S., Peng H.Y., Wang N., Lee C.S., Bello I., Lee S.T.** *Phys. Rev.* B. 2000. Vol. 61, No. 8, P. 5579-5586.

356 Growth, characterization, optical and X-ray absorption studies of nano-crystalline diamond films. **Chen L.C., Wang T.Y., Yang J.R., Chen K.H., Bhusari D.M., Chang Y.K., Hsieh H.H., Pong W.F.** *Diamond Relat. Mater.* 2000. Vol. 9, No. 3-6, P. 877-882.

357 Nanostructured diamond film on etched silicon and its field emission behavior. **Xu N.S., Chen J., Feng Y.T., Deng S.Z.** *J. Vac. Sci. Technol. B.* 2000. Vol. 18, No. 2, P. 1048-1050.

358 Scanning tunneling microscope study of diamond films for electron field emission. **Rakhimov T., Suetin N.V., Soldatov E.S., Timofeyev M.A., Trifonov A.S., Khanin V.V., Silzars A.** *J. Vac. Sci. Technol. B.* 2000. Vol. 18, No. 1, P. 76-81.

359 Study of chemical vapor deposition diamond film evolution from a nanodiamond precursor by ^{13}C isotopic labeling and ion implantation. **Gouzman I., Richter V., Rotter S., Hoffman A.** *J. Vac. Sci. Tech. A.* 2000. Vol. 18, No. 6, P. 2997-3003.

360 Study of field electron emission from nanocrystalline diamond thin films grown from a N_2/CH_4 microwave plasma. **Xu N.S., Chen J., Deng S.Z. Wu K.H., Wang E.G.** *J. Phys. D: Appl. Phys.* 2000. Vol. 33, P. 1572-1575.

361 The intrinsic relation between field electron emission and structure characteristics of amorphous diamond film. **Xu N.S., Chen J., She J.C., Deng S.Z., Chen J.** *J. Phys. D: Appl. Phys.* 2000. Vol. 33, P. 2568-2572.

362 UV Raman characteristics of nanocrystalline diamond films with different grain size. **Sun Z., Shi J.R., Tay B.K., Lau S.P.** *Diamond Relat. Mater.* 2000. Vol. 9, P. 1979-1983.

363 Ultrahard carbon nanocomposite films. **Siegal M.P., Tallant D.R., Provencio P.N., Overmyer D.L., Simpson R.L., Martinez-Miranda L.J.** *Appl. Phys. Lett.* 2000. Vol. 76, No. 21, P. 3052-3054.

364 Characterization of field emission cathodes with different forms of diamond coatings. **Zhirnov V.V., Kuttel O.M., Groning O., Alimova A.N., Detkov P.Y., Belobrov P.I., Maillard-Schaller E., Schlapbach L.** *J. Vac. Sci. Technol. B.* 1999. Vol. 17, No. 2, P. 666-669.

365 Nanocrystalline diamond coatings. **Mitura S., Mitura A., Niedzielski P., Couvrat P.** *Chaos, Solitons, & Fractals.* 1999. Vol. 10, No. 12, P. 2165-2176.

366 Nanofilms produced from organic nanodiamond suspensions. **Andrianova T.N., Zakharov A.A.** *Kolloidnyj Zhurnal.* 1999. Vol. 61, No. 2, P. 1-4 (in Russian). // Нанофазные пленки, полученные из органических суспензий ультрадисперсного алмаза. .**Андрианова Т.Н., Захаров А.А.** *Коллоидный журнал.* 1999. Т. 61, № 2. С. 1-4.

367 Theoretical studies on nanocrystalline diamond: nucleation by dicarbon and electronic structure of planar defects. **Gruen D.M., Redfern P.C., Horner D.A., Zapol P., Curtiss L.A.** *J. Phys. Chem.* B. 1999. Vol. 103, No. 26. P. 5459-5467.

368 Control of diamond film microstructure by Ar additions to CH_4/H_2 microwave plasmas. **Zhou D., Gruen D.M., Qin L.C., McCauley T.G., Krauss A.R.** *J. Appl. Phys.* 1998. Vol. 84, No. 4. P. 1981-1989.

369 Diamond film deposition on carbon nanocomposites. **Ralchenko V., Smolin A., Vlasov I., Karabutov A., Frolov V., Konov V. Gordeev S., Zukov S.** *Mol. Mater.* 1998. Vol. 11. P. 143-148.

370 Generation of microwave plasma under high pressure and fabrication of ultrafine carbon particles. **Yagi H., Ide T., Toyota H., Mori Y.** *J. Mater. Res.* 1998. Vol. 13, No 6, P.1724-1727.

371 Low-field electron emission from undoped nanostructured diamond. **Zhu W., Kochanski G.P., Jin S.** *Science.* 1998. Vol. 282, P.1471-1473.

372 Morphology and electron emission properties of nanocrystalline CVD diamond thin films. **Krauss A.R., Gruen D.M., Zhou D., McCauley T.G., Qin L.-C., Corrigan T., Auciello O., Chang R.P.H.** *Mat. Res. Soc. Symp. Proc.* 1998. Vol. 498, P. 299-310.

373 Nucleaton of nanocrystalline diamond by fragmentation of fullerene precursors. **Gruen D.M., Curtiss L.A., Redfern P.C., Qin L.C.** *Electrochem. Soc. Proceed.* 1998. Vol. 98, No. 8. P. 509-518.

374 Synthesis of nanocrystalline diamond thin films from an $Ar\text{-}CH_4$ microwave plasma. **Zhou D., McCauley T.G., Qin L.C., Krauss A.R., Gruen D.M.** *J. Appl. Phys.* 1998. Vol. 83, No. 1, P. 540-543.

375 Spectroscopic determination of carbon dimer densities in $Ar/H_2/CH_4$ and $Ar/H_2/C_{60}$ plasmas. **Goyette N., Lawler J.E., Anderson L.W., Gruen D.M., McCauley T.G., Zhou D., Krauss A.R.** *J. Phys. D: App. Phys.* 1998. Vol. 31, P. 1975-1986.

376 TEM characterization of nanodiamond thin films. **Qin L.C., Zhou D., Krauss A.R., Gruen D.M.** *Nanostruct. Mater.* 1998. Vol. 10, No. 4, P.649-660.

377 Temperature dependence of the growth rate for nanocrystalline diamond films deposited from an Ar/CH_4 microwave plasma. **McCauley T.G., Gruen D.M., Krauss A.R.** *Appl. Phys. Lett.* 1998. Vol. 73, No. 12, P. 1646-1648.

378 Field emission enhancement from Mo tip emitters coated with N containing amorphous diamond films **Ding M.Q., Choi W.B., Myers A.F., Sharma A.K., Narayan J., Cuomo J.J., Hren J.J.** *Surf. Coat. Technol.* 1997. Vol. 94-95, No. 1-3, P. 672-675.

379 Microstructure and field emission of nanocrystalline diamond prepared from C_{60} precursors. **Zhou D., Krauss A.R., Corrigan T.D., McCauley T.G., Chang R.P.H., Gruen D.M.** *J. Electrochem. Soc.* 1997, Vol. 144, No. 8, P. L224-L228.

380 Synthesis and electron field emission of nanocrystalline diamond thin films grown from N_2/CH_4 microwave plasmas. **Zhou D., Krauss A.R., Qin L.C., McCauley T.G., Gruen D.M., Corrigan T.D., Chang R.P.H., Gnaser H.** *J. Appl. Phys.* 1997. Vol. 82, No. 9, P. 4546-4550.

381 Effect of pretreatment process parameters on diamond nucleation on unscratched silicon substrates coated with amorphous carbon films. **Feng Z., Komvopoulos K., Bogy D.B., Ager III J.W., Anders S., Anders A., Wang Z., Brown I.G.** *J. Appl. Phys.* 1996. Vol. 79, No. 1, P. 485-492.

382 Formation of diamond nuclei under the growth of films and crystals from the gas phase. **Rudenko A.P., Kulakova I.I.** *Diamond Relat. Mater.* 1996. Vol. 5, P. 1070.

383 Grain boundaries and grain size distributions in nanocrystalline diamond films derived from fullerene precursors. **Csencsits R., Zuiker C.D., Gruen D.M., Krauss A.R.** *Sol. State Phenom.* 1996. Vol. 51-52, P. 261-270.

384 Hydrogen-related defects in polycrystalline CVD diamond. **Zhou X., Watkins G.D., McNamara Rutledge K.M., Messmer R.P., Chawla S.** *Phys. Rev. B.* 1996. Vol. 54. P. 7881-7890.

385 Carbon dimer, C_2, as a growth species for diamond films from methane/hydrogen/argon microwave plasmas. **Gruen D.M., Zuiker C.D., Krauss A.R., Pan X.** *J. Vac. Sci. Technol. A.* 1995. Vol. 13, No. 3, P. 1628-1632.

386 D.c. arc plasma deposition of smooth nanocrystalline diamond films. **Konov V.I., Smolin A.A., Ralchenko V.G., Pimenov S.M., Obraztsova E.D., Loubnin E.N., Metev S.M., Sepold G.** *Diamond Relat. Mater.* 1995. Vol. 4, P. 1073-1078.

387 Buckyball microwave plasmas: fragmentation and diamond-film growth. **Gruen D.M., Liu S., Krauss A.R., Pan X.** *J. Appl. Phys.* 1994. Vol. 75, No. 3, P. 1758-1763.

388 Deposition and characterization of nanocrystalline diamond films. **Gruen D.M., Pan X., Krauss A.R., Liu S., Luo J., Foster C.M.** *J. Vac. Sci. Technol. A*, 1994. Vol. 12, No. 4, P. 1491-1495.

389 Deposition of thin highly dispersive diamond films by laser ablation. **Guseva M.B., Babaev V.G., Khvostov V.V., Valliulova Z.Kh. Bregagze A.Yu., Obraztsov A.N., Alexenko A.E.** *Diamond Relat. Mater.* 1994. Vol. 3, No. 3, P. 328-331.

390 Mossbauer-effect measurement of the recoil-free fraction for Fe-57 implanted in a nanophase diamond film. **Sinor T.W., Standifird J.D., Davanloo F., Taylor K.N., Hong C., Carroll J.J., Collins C.B.** *Appl Phys Lett.* 1994. Vol. 64, No. 10, P. 1221-1223.

391 The microstructure of inclusions in nanocrystalline carbon-films deposited at low temperature. **Silva S.R.P., Knowles K.M., Amaratunga G.A.J., Putnis A.** *Diamond Relat. Mater.* 1994. Vol 3, No. 7, P. 1048-1055.

392 Thin diamond films obtained by laser evaporation of detonation soot. **Obraztsov A.N. Villafranca Otero A.L., Guseva M.B., Babaev V.G., Bregadze A.Yu., Khvostov V.V., Valliulova Z.Kh., Bouilov L.L.** *Diamond Films Technol.* 1994. Vol. 4. No. 4, P. 233-241.

See also **025, 239, 288, 400**

0.9 Applications of nanodiamonds of detonation synthesis

See also **046, 085, 607**

➢ 09.01. Nanodiamonds for seeding at CVD diamond films growth

393 Diamond films: initial CVD growth stage using nanodiamonds as nucleation centers. **Vul' A.Ya., Golubev V.G., Grudinkin S.A., Kruger A., Naramoto H.** *Techn. Phys. Lett.* 2002. Vol. 28, No. 9., P. 787-789.

394 Low-temperature (200°C) growth of diamond on nano-seeded substrate. **Hiraki A.** *Appl. Surf. Sci.* 2000. Vol. 162-163, P. 326-331.

395 CVD diamond film on the base paseted by ultrafine diamond. **Chen Q., Zhai H.Z., Yun S.R., Zhu H.S.** *Chin. Sci. Bull.* 1999. Vol. 44, No. 1, P. 36-41.

396 Nano-particles seeding and its characterization by X-ray photoelectron spectroscopy (XPS). **Eliyahu A., Buehler J., Ben-Chorin M., Cohen H., Prior Y.** *Diamond Relat. Mater.*, 1999. Vol. 8, P.146-149.

397 Enhanced nucleation and growth of diamond thin films using a nanodiamond monolayer. **Guerin D., Ismat Shah S.** *J. Mater. Sci. Letters.* 1997. Vol. 16, P. 476-478.

398 Ultrahigh particle density seeding with nanocrystal diamond particles. **Makita H., Nishimura K., Jiang N., Hatta A., Ito T., Hiraki A.** *Thin Solid Films.* 1996. Vol. 281-282, P.279-281.

399 Low temperature fabrication of diamond films with nanocrystal seeding. **Yara T., Makita H., Hatta A., Ito T., Hiraki A.** *Jpn. J. Appl. Phys.* 1995. Vol. 34, P. 312-315.

400 Optical monitoring of nucleation and growth of diamond films. **Smolin A.A., Ralchenko V.G., Pimenov S.M., Kononenko T.V., Loubnin E.N.** *Appl.Phys. Lett.* 1993. Vol. 62, No. 26, P. 3449-3451.

See also **275, 359**

➢ 09.02. Nanodiamonds for electroplating and chemical coatings

401 Preparation of wear-resistant chromium coatings using variously synthesized nanodiamonds. **Dolmatov V.Yu., Fujimura T., Burkat G.K., Orlova E.A.** *Superhard Materials.* 2002. No. 6. // Получение износостойких хромовых покрытий с применением наноалмазов различной природы. **Долматов В.Ю., Фуджимура Т., Буркат Г.К., Орлова Е.А.** *Сверхтвердые материалы.* 2002. № 6, С. 16-21.

402 Preparation and properties of electrochemical composite coatings of precious and nonferrous metals with ultradispersed detonation-synthesized diamonds. **Dolmatov V.Yu., Burkat G K., Saburbaev V.Yu., Salko A.E., Veretennikova M.V.** *Superhard Materials.* 2001. No. 2, P. 49-55. // Получение и свойства электрохимических композиционных покрытий благородными и цветными металлами с ультрадисперсными алмазами детонационного синтеза. **Долматов В.Ю., Буркат Г.К., Сабурбаев В.Ю., Салько А.Е., Веретенникова М.В.** *Сверхтвердые материалы.* 2001. № 2, С. 52-57.

403 Detonation-synthesized ultradispersed diamonds as a basis of a new class of composite metal-diamond electroplated coatings. **Dolmatov V.Yu., Burkat G.K.** *Superhard Materials.* 2000. No. 1, P. 78-86. // **Долматов В.Ю., Буркат Г.К.** Ультрадисперсные алмазы детонационного синтеза как основа нового класса композиционных металл-алмазных гальванических покрытий. *Сверхтвердые материалы.* 2000. № 1, С. 84-95.

404 Grain boundaries and mechanical properties of nanocrystalline diamond films. **Busmann H.-G., Pageler A., Brauneck U., Gruen D.M.** *J. Metastable and Nanocrystalline Mat.* 2000. Vol. 8, P. 255-260.

405 Electroplating of gold-nanodiamond composite coatings. **Loubnin E.N., Pimenov S.M., Blatter A., Schwager F., Detkov P.Ya.** *New Diamond Front. Carbon Technol.* 1999. Vol. 9, No. 4, P. 273.

406 Integral and local field emission analyses of nanodiamond coatings for power applications. **Göhl A., Alimova A.N., Habermann T., Mescheryakova A.L., Nau D., Zhirnov V.V., Mueller G.** *J. Vac. Sci. Technol. B.* 1999. Vol. 17, No. 2, P. 670-673.

407 The influence of ultradisperse diamond-like particles on the microstructure of electroplated chromium coatings. **Vereschagin A.L., Zolotuhina I.I., Brylyakov P.M., Gubarevich V.D., Chernyh S.A., Bychin N.V., Komarov V.F.** *Superhard Materials.* 1991. No. 1, P. 46-49. // Влияние ультрадисперсных частиц алмазоподобной фазы углерода на микроструктуру электроосажденного хромового покрытия. **Верещагин А.Л., Золотухина И.И., Брыляков П.М., Губаревич В.Д., Черных С.А., Бычин Н.В., Комаров В.Ф.** *Сверхтвёрдые материалы.* 1991. № 1, С. 46-49.

See also **282, 284**

➢ 09.03. Composites based on nanodiamonds

408 Carbon nanocomposite materials of nanodiamonds: production and properties. **Gordeev S.K.** *Superhard Materials.* 2002. No. 6. // Углеродные нанокомпозиционные материалы из наноалмаза: получение и свойства. **Гордеев С.К.** *Сверхтвердые материалы.* 2002. № 6, С. 60-67.

409 Mechanical behavior and microstructure of nanodiamond-based composite materials. **Ekimov E.A., Palosz B., Gierlotka S., Lojkowski W., Kozubowski J.A., Gromnitskaya E.L., Naletov A.M., Swiderska-Sroda A.** *J. Mater. Sci. Letters.* 2002. Vol. 21. No. 21, P. 1699.

410 The effect of modifying nanodiamond admixtures on the reological characteristics of polyisoprene composites. **Tsypkina I.M., Voznyakovskij A.P.** Materialy konferencii "Novye tehnologii v khimicheskoj promyshlennosti" November 20-22, 2002. Minsk: BGTU. 2002. Pt. 1, P. 15-18. // Влияние модифицирующих добавок алмазосодержащего наноуглерода на реологические свойства композитов на основе полиизопренов. **Цыпкина И.М., Возняковский А.П.** Материалы конференции "Новые технологии в химической промышленности" 20-22 ноября 2002 г., Минск: БГТУ. 2002. Ч. 1, С. 15-18.

411 Multipurpose high-strength polymer-diamond film coatings. **Voznyakovskij A.P., Fujimura T., Sokolov Yu.P., Dolmatov V.Yu.** Materialy 2-j Mezhdunarodnoj nauchno-tehnicheskoj konferencii "Inzheneriya poverhnosti i renovatsiya izdelij". 28-30 May, Yalta, Ukraina, 2002, Kiev: 2002. P. 23-25. // Многофункциональные прочные протекторные полимер-алмазные пленочные покрытия. **Возняковский А.П., Фуджимура Т., Соколов Ю.П., Долматов В.Ю.** Материалы 2-й Международной научно-технической конференции "Инженерия поверхности и реновация изделий". 28-30 мая Ялта, Украина, 2002 г. Киев: 2002. С. 23-25.

412 Properties of polycrystals high-pressure sintered from diamond powders produced by detonation and static syntheses. **Bochechka A.A.** *Superhard Materials.* 2002. No. 6. // Свойства поликристаллов, спеченных при высоких давлениях из алмазных нанопорошков детонационного и статического синтеза. **Бочечка А.А.** *Сверхтвердые материалы.* 2002. № 6, С. 37-42.

413 Rheological modeling and fracture of hard oxide ceramics modified by ultra-dispersed diamond nanoparticles. **Kireitseu M.** *Particulate Sci. Tech.* 2002. Vol. 20, No. 3, P. 209-223.

414 Some peculiarities of preparation and physico-mechanical properties of diamond grits plated with chemical composite coatings containing ultradispersed diamonds. **Duda T.M., Nikitin Yu.I., Poltoratskiy V.G., Khripkova L.D., Shamrayeva V.S., Nesterenko T.M.**. *Superhard Materials.* 2002. No. 5, P. 79-84. // Некоторые особенности получения и физико-механические свойства алмазных порошков, металлизированных композиционными химическими покрытиями с включением УДА. **Дуда Т.М., Никитин Ю.И., Полторацкий В.Г., Хрипкова Л.Д., Шамраева В.С., Нестеренко Т.М.** *Сверхтвердые материалы.* 2002. № 5, С. 88-94.

415 Modification of polymers using detonation-synthesized ultradispersed diamonds (nanodiamonds). **Dolmatov V.Yu., Voznyakovskii A.P., Veretennikova M.V.** *Superhard Materials.* 2001. No. 6, P. 75-78. // Модификация полимеров ультрадисперсными алмазами детонационного синтеза (наноалмазами). **Долматов В.Ю., Возняковский А.П., Веретенникова М.В.** *Сверхтвердые материалы.* 2001. № 6, С. 81-85.

416 Nanoporous and nanofragmental carbon composite materials. **Gordeev S.** In: Nanostructured Carbon for Advanced Applications. Eds. Benedek G. et al. Kluwer Academic Pub.: 2001. P. 71-88.

417 Novel solid nano diamond/pyrocarbon semiconductor materials. **Gordeev S.K., Belobrov P.I., Kiselev N.I., Petrakovskaya E.A., Ekstrom T.C.** *Mat. Res. Soc. Symp. Proc.* Microcrystalline and Nanocrystalline Semiconductors. 2001. Vol. 638, F18.4.1-6.

418 Sintering of statically synthesized diamond nanopowders and properties of polycrystals made of them. **Shulzhenko A.A., Bochechka A.A., Oleinik G.S., Gargin V.G., Romanko L.A., Belyavina N.N., Dub S.N., Rogov V.V.** *Superhard Materials.* 2001. No. 5, P. 28-36. // Спекание алмазного нанопорошка статического синтеза и свойства поликристаллов на его основе. **Шульженко А.А., Бочечка А.А., Олейник Г.С., Гаргин В. Г., Романко Л.А., Белявина Н.Н., Дуб С.Н., Рогов В.В.** *Сверхтвердые материалы.* 2001. № 5, С. 29-37.

419 High-pressure, high-temperature synthesis of SiC-diamond nanocrystalline ceramics. **Ekimov A.G., Gavriliuk B., Palosz S., Gierlotka P., Dluzewski E., Tatianin Yu., Kluev A., Naletov M., Presz A.** *Appl. Phys. Lett.* 2000. Vol. 77, P. 954-956.

420 The use of diamond nanopowders to strengthen a diamond–SiC composite material. **Shulzhenko A.A., Gargin V.G., Bochechka A.A., Oleinik G.S., Danilenko N.V.** *Superhard Materials.* 2000. No. 3, P. 1-13. // Применение алмазных нанопорошков для увеличения прочности композита на основе алмаза и карбида кремния. **Шульженко А.А., Гаргин В.Г., Бочечка А.А., Олейник Г.С., Даниленко Н.В.** *Сверхтвердые материалы.* 2000. № 3, С. 3-15.

421 Thermal properties of diamond/carbon composites. **Vlasov A.V., Ralchenko V.G., Gordeev S.K., Zakharov D.N., Vlasov I.I., Karabutov A.V., Belobrov P.I.** *Diamond Relat. Mater.* 2000. Vol. 9, P. 1104 - 1109.

422 Diamond/carbon nanocomposites: applications for diamond film deposition and field electron emission. **Ralchenko V., Karabutov A., Vlasov I., Frolov V., Konov V., Gordeev S., Zhukov S., Dementjev A.** *Diamond Relat. Mater.* 1999. Vol. 8-9, P. 1496-1501.

423 The production and properties of nickel composite coatings with nanodiamonds. **Toropov A.D., Detkov P.Ya., Chukhaeva S.I.** *Gal'vanotehnika i obrabotka poverhnosti.* 1999. P. 14-19 (in Russian). // Получение и свойства композицицнных никелевых покрытий с ультрадисперсными алмазами. **Торопов А.Д., Детков П.Я., Чухаева С.И.** *Гальванотехника и обработка поверхности.* 1999. С. 14-19.

424 Ultradisperse diamonds as a basis for a new class of composites. **Dolmatov V.Yu., Zhirkevich V.Yu., Postnov V.N.** *Mehanika Kompozitsionnyh Materialov i Konstruktsij.* 1999. Vol. 5, No. 2, P. 41-47 (in Russian). // Ультрадисперсные алмазы как основа нового класса композиционных материалов. **Долматов В.Ю., Жиркевич В.Ю., Постнов В.Н.** *Механика композиционных материалов и конструкций.* 1999. Т. 5, № 2, С. 41-47.

425 Evolution of the structure of a compact during high-pressure sintering of nanodispersed diamonds. **Danilenko V.V., Petrusha I.A., Oleinik G.S., Danilenko N.V.** *Superhard Materials.* 1998. No. 4. P. 49-56. // Эволюция структуры компакта при спекании нанодисперсных алмазов в условиях высоких давлений. **Даниленко В.В., Петруша И.А., Олейник Г.С., Даниленко Н.В.** *Сверхтвердые материалы.* 1998. № 4, С. 53-61.

426 Effect of desorbed gases on high-pressure sintering of diamond powders **Bochechka A.A.** *Superhard Materials.* 1998. No. 4, P. 8-13. // Влияние десорбированных газов на спекание алмазных порошков под действием высокого давления. **Бочечка А.А.** *Сверхтвердые материалы.* 1998. № 4, С. 10-16.

427 Peculiarities of high pressure-high temperature compacting of ultradispersed diamond powders. **Zvonarev E.V., Senyut V.T., Starchenko I.M., Finskaya V.M.** *Superhard Materials.* 1998. No. 4, P. 38-42. // Особенности компактирования УДА-порошков в условиях высоких давлений и температур. **Звонарев Е.В., Сенють В.Т., Старченко И.М., Финская В.М.** *Сверхтвердые материалы.* 1998. № 4, С. 41-46.

428 Structure of polycrystals sintered from explosion-synthesized diamond powders. **Britun V.F., Kurdyumov A.V.** *Superhard Materials.* 1998. No. 4, P. 33-37. // Структура поликристаллов, полученных спеканием алмазных порошков динамического синтеза. **Бритун В.Ф., Курдюмов А.В.** *Сверхтвердые материалы.* 1998. № 4, С. 36-41.

429 The interaction of rubbers with detonation diamond-like carbon. **Voznyakovskij A.P., Ramsh A.S., Dolmatov V.Yu., Kovalev N.F., Bodrova V.S., Shelohneva L.F.** *Kauchuk i Rezina* 1998. No. 1, P. 6-10 (in Russian). // Исследование взаимодействия каучуков с техническим алмазным углеродом взрывного синтеза. **Возняковский А.П., Рамш А.С., Долматов В.Ю., Ковалев Н.Ф., Бодрова В.С., Шелохнева Л.Ф.** *Каучук и резина.* 1998. № 1. С. 6-10.

430 Advanced composite materials. **Gordeev S.K.** In: Diamond Based Composites and Related Materials. Eds. Prelas M.A., Benedictus A., Lin L.T.S., Popovici G., Gielisse P. Kluwer Academic Pub.: 1997. P. 1-11.

431 A technology of saturated polymer composites with detonation nanodiamonds. **Voznyakovskij A.P., Dolmatov V.Yu.** Doklady Mezhdunarodnoj konferencii "Fundamental'nye problemy nauki o polimerax" Moskow, January 21-23, 1997. P. 3-18 (in Russian). // Особенности получения высоконаполненных полимерных композитов с наноалмазами взрывного синтеза. **Возняковский А.П., Долматов В.Ю.** Доклады Международной конференции "Фундаментальные проблемы науки о полимерах" Москва, 21-23 января 1997, С. 3-18.

432 Atomic force microscopy investigations on the surface topographies of aluminum-based composite containing nanocluster diamonds. **Ouyang Q., Wang B., Okada K.** *J. Vac. Sci. Technol. B.* 1997. Vol. 15, No. 4, P. 1449.

433 Hot pressing of nanodiamond powder. **Popovici G., Prelas M.A., Golshani F., Han P., Huggins K.E.** In: Diamond Based Composites and Related Materials. Eds. Prelas M.A., Benedictus A., Lin L.-T.S., Popovici G., Gielisse P. Kluwer Academic Pub.: 1997. P. 31-38.

434 Perspective applications of technological diamonds for re-inforcement of isoprene rubbers. **Voznyakovskij A.P., Shelohneva L.F., Dolmatov V.Yu., Bodrova V.S.** *Kauchuk i Rezina.* 1996. No. 6. P. 27-30 (in Russian). // Перспектива использования технического алмазного углерода взрывного синтеза для усиления изопреновых каучуков. **Возняковский А.П., Шелохнева Л.Ф., Долматов В.Ю., Бодрова В.С.** *Каучук и резина.* 1996. № 6, С. 27-30.

435 Composite materials: nanodiamond-pyrocarbon. **Gordeev S.K., Zhukov S.G., Nikitin Yu.I., Poltoratsikij V.G.** *Neorganicheskie materialy.* 1995. T. 31, No. 4, P. 470-474. // Композиционные материалы: ультрадисперсные алмазы - пироуглерод. **Гордеев С.К., Жуков С.Г., Никитин Ю.И., Полторацикий В.Г.** *Неорганические материалы.* 1995. Т. 31, № 4, С. 470-474.

436 Dynamical compacting of ultradisperse diamond. **Lin E.E., Novikov S.A., Kuropatkin V.G., Medvedkin V.A., Suharenko V.I.** *Fiz. Goren. Vzryva.* 1995. Vol. 31, No. 5. P. 136-138 (in Russian). // Динамическое компактирование ультрадисперсных алмазов **Лин Э.Э., Новиков С.А., Куропаткин В.Г., Медведкин В.А., Сухаренко В.И.** *Физика горения и взрыва.* 1995. Т. 31, № 5, С. 136-138.

437 Preparation of ultradisperse diamonds pyrolytic carbon composite materials. **Gordeev S.K., Zhukov S.G., Nikitin Y.I., Poltoratskii V.G.** *Inorg. Mater.-Engl. Tr.* 1995. Vol. 31, P. 434-438.

438 Composite materials on the base of polyfluorated co-polymers and detonation diamond. **Voznyakovskij A.P., Dolmatov V.Yu., Levintova E.A., Gubarevich T.M.** Doklady mezhdunarodnoj konferencii po kauchuku i rezine. Moskva, 27 September - 1 October 1994., Vol. 2, P. 80-87 (in Russian). // Композиционные материалы на основе полифторированных сополимеров и технического алмазного углерода взрывного синтеза. **Возняковский А.П., Долматов В.Ю., Левинтова Е.А., Губаревич Т.М.** Доклады международной конференции по каучуку и резине. Москва, 27 сентября - 1 октября 1994 г., Т. 2, С. 80-87.

439 Friction properties of aluminum-based composites containing cluster diamond. **Ouyang Q., Okada K.** *J. Vac. Sci. Technol.* A. 1994. Vol. 12, No. 4, P. 2577-2580.

440 Mechanisms of orientation and graphitization of hard-carbon matrices in carbon/carbon composites. **Rellick G.S., Chang D.J., Zaldivar R.J.** *J. Mater. Res.* 1992. Vol. 7, No. 10, P. 2798-2809.

441 Nano-diamond enhanced silicon carbide matrix composites. **Ownby P.D., Liu J.** *Ceram. Eng. Sci. Proc.* 1991. Vol. 12, No. 7-8, P. 1345 -1355.

See also **263, 402, 403, 447, 475, 523, 604, 625, 631**

➢ 09.04. Antifriction coatings from nanodiamonds

442 Friction of smooth surfaces with ultrafine particles in the clearance. **Chizhik S.A., Goldade A.V., Korotkevich S.V., Dubravin A.M.** *Wear.* 2000. Vol. 238, No. 1,P. 25-33.

443 Nanodiamond films superior in durability to hard alloys. **Andrianova T.N., Zakharov A.A., Letunovsky V.V., Demchenko A.N., Sergienko V.P., Gorshkov A.S., Goryacheva L.V.** *Zhurnal Prikladnoj Khimii.* 2000. Vol. 73. No. 3. P. 365-368. (in Russian) // Покрытия из ультрадисперсного алмаза, повышающие износостойкость твердых сплавов. **Андрианова Т.Н., Захаров А.А., Летуновский В.В., Демченко А.Н., Сергиенко В.П., Горшков А.С., Горячева Л.В.** *Журнал прикладной химии.* 2000. Т. 73, № 3, С. 365-368.

444 Study on super-fine diamond cluster with application to ultra-precision surface generation. **Eda H., Hamada H., Tomita Y., Yamamoto Y.** *J. Balkan Tribological Association.* 1999. Vol. 5, No. 1-2, P. 94-104.

445 Tribological properties of nanocrystalline diamond films. **Erdemir A., Fenske G.R., Krauss A.R., Gruen D.M., McCauley T., Csencsits R.T.** *Surf. Coat. Technol.* 1999. Vol. 120-121, P. 565-572.

446 Formation of wear-resistant antifriction composite coating reinforced with ultradispersed diamonds. **Antonyuk V.S.** *Superhard Materials.* 1998. No. 4. P. 66-69. // Формирование износостойкого антифрикционного покрытия композитом, армированным ультрадисперсными алмазами. **Антонюк В.С.** *Сверхтвердые материалы.* 1998. № 4, С. 72-76.

447 Prospects for the development and application of bronze-based antifriction composite materials reinforced with shock-wave diamonds. **Volkogon V.M.** *Superhard Materials.* 1998. No. 4, P. 57-60. // Перспективы создания и применения антифрикционных композиционных материалов на основе бронз, армированных детонационными алмазами. **Волкогон В.М.** *Сверхтвердые материалы.* 1998. № 4, С. 62-67.

448 Ultradisperse diamonds in engineering industries: lubrication. **Komarov V.F.** // *Tehnika Mashinostroeniya.* 1998. No. 1, P. 124-125 (in Russian). // Ультрадисперсные алмазы в машиностроении. Смазка. **Комаров В.Ф.** *Техника машиностроения.* 1998. № 1, С. 124-125.

See also **258, 622, 630, 634**

➢ 09.05. Nanodiamonds for polishing

449 Ultradisperse diamonds in engineering industries: polishing. **Komarov V.F.** *Tehnika Mashinostroeniya.* 1997. No. 4, P. 106-107 (in Russian). // Ультрадисперсные алмазы в машиностроении. Полирование. **Комаров В.Ф.** *Техника машиностроения.* 1997. № 4, С. 106-107.

450 Application of ultradisperse detonation diamond powder for polishing X-ray optical devices. **Baraboshkin K.S., Volokhov A.I., Komarov V.F., Kostyukov S.I., Kruglyakov E.P., Petrov E.A., Fedorchenko M.F., Chalo N.I.** *Optich. Zhurnal.* 1996. Vol. 63, No. 9, P. 58-60 (in Russian). // Применение ультрадисперсных алмазных порошков детонационной природы для полирования рентгенооптических элементов. **Барабошкин К.С., Волохов А.И., Комаров В.Ф., Костюков С.И., Кругляков Э. П.,Петров Е.А., Федорченко М.Ф., Чхало Н.И.** *Оптический журнал.* 1996. Т. 63, № 9, С. 58-60.

451 Ultradispersed diamond powders of detonation nature for polishing X-ray mirrors. **Chkhalo N.I., Fedorchenko M.V., Kruglyakov E.P., Volokhov A.I., Baraboshkin K.S., Komarov V.F., Kostyukov S.I., Petrov E.A.** *Nucl. Instrum. Methods, A.* 1995. Vol. 359, No. 1-2, P. 155-156.

See also **615, 616, 621, 629**

➢ 09.06. Bioactivity of nanodiamond

452 Carbon nanocomposite materials as medicinal depot. **Ostrovidova G.U., Makeev A.V., Biryukov A.V., Gordeev S.K.** *Mater. Sci. Eng. C.* 2003. Vol. 23, No. 3, P. 377-381.

453 DNA-modified diamond surfaces. **Knickerbocker T., Strother T., Schwartz M.P., Russell J.N., Butler J., Smith L.M., Hamers R.J.** *Langmuir.* 2003. Vol. 19, No. 6, P. 1938-1942.

454 Damaging effect of detonation diamonds on human white and red blood cells *in vitro.* **Puzyr' A.P., Tarskikh S.V., Makarskaya G.V., Chiganova G.A., Larionova I.S., Detkov P.Ya., Bondar'V.S.** *Dokl. Akad. Nauk* (Proceedings of the Russian Academy of Sciences). 2002. Vol. 385, No. 1-6, P. 201-204.

455 DNA-modified nanocrystalline diamond thin-films as stable, biologically active substrate. **Yang W., Auciello O., Butler J.E., Cai W., Carlisle J.A., Gerbi J., Gruen D.M., Knickerbocker T., Lasseter T.L., Russell J.N., Smith L.M., Hamers R.J.** *Nature Materials.* 2002. Vol. 1, No. 4, P. 253-257.

456 Nanostructures based on explosive synthesis particles and protein molecules. **Puzyr' A.P., Purtov K.V., Bukayemsky A.A., Bondar' V.S.** Proc. of 12th Intern. Symp. on Thin Films in Electronics, Kharkov, Ukraine, 2001. P. 320-325.

457 Supramolecular structure of nanodiamond particles and obelin built up on a two-dimensional plate. **Purtov K.V., Bondar' V.S., Puzyr' A.P.** *Dokl. Akad. Nauk.* 2001. Vol. 380, No. 3, P. 339-342 (in Russian).

458 Application of nanodiamond particles for express extraction of recombinant apoobelin from Escherichia coli. **Bondar', V.S., Puzyr' A.P.** *Dokl. Akad. Nauk.* 2000. Vol. 373, No. 2, P. 251-253 (in Russian).

459 Detonation-synthesized nanodiamonds and the possibility to develop a new generation of medicines. **Dolmatov V.Yu. Kostrova L.N.** *Superhard Materials.* 2000. No. 3, P. 79-82. // Наноалмазы детонационного синтеза и возможность создания лекарственных нового поколения средств. **Долматов В.Ю., Кострова Л.Н.** *Сверхтвердые материалы.* 2000. № 3, С. 82-85.

460 Preparation of complexes nanodiamond-protein-δ-aluminum oxide. **Puzyr A.P., Bondar V.S., Belobrov P.I., Bukaemskii A.A.** *Dokl. Akad. Nauk* 2000. Vol. 373, P. 139-141 (in Russian).

461 Preparation of nanodiamond-protein--aluminum oxide complex. **Puzyr A.P., Bondar V.S., Belobrov P.I., Bukaemskii A.A.** *Dokl. Akad. Nauk.* 2000. Vol. 373. No. 3, P. 408-410 (in Russian).

462 Production of the nanodiamond-protein-8-aluminum oxide complex. **Puzyr' A.P., Bondar' B.C., Belobrov P.I., BukaemskiiA.A.** *Dokl. Akad. Nauk.* 2000. T. 373, No. 3, P. 408-410 (in Russian). // Получение комплекса наноалмаз-белок-8-оксид алюминия **Пузырь А.П., Бондарь В.С., Белобров П.И., Букаемский А.А.** *Докл. Акад. Наук.* 2000. Т. 373. № 3, С. 408-410.

463 The use of nanodiamond particles for express removal of recombinational apoobeline from Escherichia coli. **Bondar' B.C., Puzyr' A.P.** *Dokl. Akad. Nauk.* 2000. Vol. 373, No. 2. P. 251-253 (in Russian). // Применение частиц наноалмаза для экспресс выделения рекомбинатного апообелина из Escherichia coli. **Бондарь В.С., Пузырь А.П.** *Докл. Акад. Наук.* 2000. Т. 373, № 2, С. 251-253.

464 Use of nanodiamond particles for rapid isolation of recombinant apoobelin from Escherichia coli. **Bondar V.A., Puzyr A.P.** *Dokl. Akad. Nauk* 2000. Vol. 373, P. 129-131 (in Russian).

465 Advanced composite materials. **Gordeev S.K.** Diamond Based Composite Materials and Related Materials. NATO ASI. Series 3. Kluwer Academic Pub.: 1996. Vol. 38, P. 1-11.

466 Surface-modified diamond nanoparticles as antigen delivery vehicles. **Kossovsky N., Gelman A., Hnatyszyn H.J., Rajguru S., Garrell R.L., Torbati S., Feeney S.S., Chow G.-M.** *Bioconjugate Chem.* 1995. Vol. 6, No. 5, P. 507-511.

See also **455**

➢ 09.07. Nanodiamonds as adsorbents

467 Diamond - an adsorbent of a new type. **Bogatyreva G.P., Marinich M.A., Gvyazdovskaya V.L.** *Diamond Relat. Mater.* 2000. Vol. 9, P. 2002-2005.

See also **340, 354, 358, 371, 522**

➢ 09.08 Other applications

468 Electron emission from diamond nanoparticles on metal tips. **Tyler T., Zhirnov V.V., Kvit A.V., Kang D., Hren J.J.** *Appl. Phys. Lett.* 2003. Vol. 82, No. 17, P. 2904-2906.

469 A novel zirconocene/ultradispersed diamond black powder supported catalytic system for ethylene polymerization. **Yuan Y.L., Wang L., Feng L.X.** *Europ. Polymer J.* 2002. Vol. 38, No. 10, P. 2125-2128.

470 Catalysis on electrodes of promoted ultradispersed diamonds. **Zhutaeva G.V., Marinich M.A., Bogatyreva G.P., Ishchenko E.V., Chernysheva I.S., Tarasevich M.P.** *Superhard Materials.* 2002. No. 6. // Электрокатализ на электродах на основе промотированного ультрадисперсного алмаза. **Жутаева Г.В., Маринич М.А., Богатырева Г.П., Ищенко Е.В., Чернышова И.С., Тарасевич М.Р.** *Сверхтвердые материалы.* 2002. № 6, С. 55-59.

471 Onion-like carbon and diamond nanoparticles for optical limiting. **Koudoumas E., Kokkinaki O., Konstantaki M., Couris S., Korovin S., Detkov P., Kuznetsov V., Pimenov S., Pustovoi V.** *Chem. Phys. Lett.* 2002. Vol. 357, No. 5-6, P. 336-340.

472 Protective coatings from ultra fine diamond. **Patrusheva T., Letunovsky V., Gorjacheva L., Gorschkov A., Sergienko V., Jakovleva E.** *Carbon.* 2002. Vol. 40, P. 125-135.

473 Use of industrial diamonds in HPLC. **Patel B.A., Rutt K.J., Padalko V.I., Mikhalovsky S.V.** *Superhard Materials.* 2002. No. 6. // Использование промышленных алмазов в HPLC. **Patel B.A., Rutt K.J., Padalko V.I., Mikhalovsky S.V.** *Сверхтвердые материалы.* 2002. № 6, С. 51-54.

474 Diamond/sp2-bonded carbon structures: quantum well field electron emission? **Karabutov A.V., Frolov V.D., Konov V.I.** *Diamond Relat. Mater.* 2001. Vol. 10, P. 840-846.

475 Low-field electron emission of diamond/pyrocarbon composites. **Karabutov V., Frolov V.D., Konov V.I., Ralchenko V.G., Gordeev S.K., Belobrov P.I.** *J. Vac. Sci. Technol. B.* 2001. Vol. 19, No. 3, P. 965-970.

476 Nano-sized diamond obtained from explosive detonation and its application **Chen Q., Yun S.** *Mater. Res. Bull.* 2001. Vol. 35, No. 12, P. 1915-1919.

477 Low temperature growth of ultrananocrystalline diamond of glass substrates for field emission applications. **Corrigan T.D., Krauss A.R., Gruen D.M., Auciello O., Chang R.P.H.** *Mat. Res. Soc. Symp. Proc.* 2000. Vol. 593, P. 233-236.

478 Two- and three-dimensional ultrananocrystalline diamond (UNCD) structures for a high resolution diamond-based MEMs technology. **Auciello O., Krauss A.R., Gruen D.M., Busmann H.G., Meyer E.M., Tucek J., Sumant A., Jayatissa A., Moldovan N., Mancini D.C., Gardos M.N.** *Mat. Res. Soc. Symp. Proc.* 2000. Vol. 605, P. 73-78.

479 Experience in and prospects for non-traditional use of explosion-synthesized ultradispersed diamonds. **Dolmatov V.Yu.** *Superhard Materials.* 1998. No. 4, P. 70-73. // Опыт и перспективы нетрадиционного использования ультрадисперсных алмазов взрывного синтеза. **Долматов В.Ю.** *Сверхтвердые материалы.* 1998. № 4, С. 77-81.

480 Ultradisperse diamonds in engineering industries. **Komarov V.F.** *Tehnika Mashinostroeniya.* 1997. No. 3, P. 69-71 (in Russian). // Ультрадисперсные алмазы в машиностроении. **Комаров В.Ф.** *Техника машиностроения.* 1997. № 3, С. 69-71.

481 Diamond synthesis: The Russian connection. **DeVries R.C., Badzian A., Roy R.** *Mater. Res. Soc. Bull.* 1996. Vol. 21, No. 65-75, P. 70-71.

482 Ultradisperse diamond powders. **Litvinov B.V., Filatov L.I., Detkov P.Ya., Samylov S.V., Averin A.N., Kramskoj Yu.I., Chukhaeva S.I.** *Nov. Prom. Tehnologii.* 1994. No. 1, P. 30-32 (in Russian). // Порошки ультрадисперсных алмазов. **Литвинов Б.В., Филатов Л.И., Детков П.Я., Самылов С.В., Аверин А.Н., Крамской Ю.И., Чухаева С.И.** *Нов. пром. технологии.* 1994. № 1, С. 30-32.

483 Synthesis of diamond oxide systems from nanodiamonds. **Gubarevich T.M, Tysheckaya A.B.** *Zhurnal prikladnoj khimii.* 1992. Vol. 65, No. 1. P. 34-37 (in Russian). // Синтез и исследование алмазоксидных систем на основе ультрадисперсных алмазов. **Губаревич Т.М, Тышецкая А.Б.** *Журнал прикладной химии.* 1992. Т. 65, № 1, С. 34-37.

See also **074, 135, 136, 140, 194, 234, 235, 237, 278, 343, 353**

10. Nanographite, carbon onions and other nanodiamond-derived materials

See also **079**

➢ 10.01. Nanographite and low-dimensional carbon

484 Mesoscopic origami with graphite: scrolls, nanotubes, peapods. **Tomanek D.** *Physica B.* 2002. Vol. 323, No. 1-4, P. 86-89.

485 The temperature dependence of the electroresistivity and the negative magnetoresistance of carbon nanoparticles. **Romanenko A.I., Anikeeva O.B., Okotrub A.V., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Dong C., Ni Y.** *Phys. Solid State.* 2002. Vol. 44, No. 3, P. 487-489.

486 Effect of fluorination on nano-sized p-electron systems. **Takai K., Sato H., Enoki T., Yoshida N., Okino F., Touhara H., Endo M.** *J. Phys. Soc. Jpn.* 2001. Vol. 70, No. 1, P. 175-185.

487 Electronic transport properties of nanographite ribbon junctions. **Wakabayashi K.** *Phys. Rev.* B. 2001. Vol. 64, P. 125428.

488 Experimental evidence of a single nano-graphene. **Affoune M., Prasad B.L.V., Sato H., Enoki T., Kaburagi Y., Hishiyama Y.** *Chem. Phys. Lett.* 2001. Vol. 348, No. 1-2, P. 17-20.

489 Intercalated nanographite: Structure and electronic properties. **Prasad L.V., Sato H., Enoki T., Hishiyama Y., Kaburagi Y., Rao A.M., Eklund P.C.** *Phys. Rev. B.* 2001. Vol. 64, P. 235407.

490 Magnetism of nano-graphite and its assembly. **Enoki T., Kawatsu N., Shibayama Y., Sato H., Kobori R., Maruyama S., Kaneko K.** *Polyhedrons.* 2001. Vol. 20, No. 2, P. 1311-1315.

491 Mechanism of magnetism in stacked nanographite: theoretical study. **Harigaya K., Kawatsu N., Enoki T.** *Nanonetwork Materials: Fullerenes, Nanotubes, and Related Systems.* 2001. P. 529-532.

492 New type of antiferromagnetic state in stacked nanographite. **Harigaya K.** *Chemical Physics Letters.* 2001. Vol. 340, No. 1-2, P. 123-128.

493 Polygon building block route to sp(2)-carbon-based materials. **Lee C.Y., Chiu H.T., Peng C.W., Yen M.Y., Chang Y.H., Liu C.S.** *Adv. Mater.* 2001. Vol. 13, No. 14, P. 1105.

494 Structure and solid state properties of nano-graphite derived from nano-diamond. **Enoki T., Prasad B.L.V.** *Tanso.* 2001. Vol. 198, P. 139-146.

495 Carbon lines on SiC (001) surfaces. **Catellani A., Galli G., Rigolli P.** *Phys. Rev.* B. 2000. Vol. 62, No. 8, P. R4794-R4797.

496 Disordered magnetism at the metal-insulator threshold in nano-graphite-based carbon material. **Shibayama Y., Sato H., Enoki T., Endo M.** *Phys. Rev. Lett.* 2000. Vol. 84, No. 8, P.1744-1747.

497 Electronic transport through nanographite ribbon junctions. **Wakabayashi K., Sigrist M.** *Physica B: Condensed Matter.* 2000. Vol. 284, P. 1750-1751.

498 Energy of deformed and defective carbon clusters. **Romanov E., Sheinerman A.G.** *Phys. Solid State.* 2000. Vol. 42, No. 8, P. 1569-1574.

499 Nano-graphite and its intercalation compounds. **Enoki T., Shibayama Y., Prasad B.L.V., Sato H.** *Mol. Cryst. Liquid Cryst. Sci. and Tech., Section C: Molecular Materials.* 2000. Vol. 13, No. 1-4, P. 31-40.

500 Surface superstructure of carbon clusters deposited on graphite during recrystallization. **An B., Fukuyama S., Yokogawa K., Yoshimura M.** *J. Vac. Sci. Technol. B.* 2000.Vol. 18, No. 1, P. 98-102.

501 Edge-localized phonons in nanographite ribbons. **Igami M., Fujita M., Mizuno S.** *Synthetic Metals.* 1999. Vol. 103, No 1-3, P. 2576-2577.

502 Structural models of amorphous carbon surfaces. **Haerle R., Galli G., Baldereschi A.** *Appl. Phys. Lett.* 1999. Vol. 75, P. 1718-1720.

503 A descriptive model linking possible formation mechanisms for graphite-encapsulated nanocrystals to processing parameters. **Elliot B.R., Host J.J., Dravid V.P., Teng M.H., Hwang J.H.** *J. Mater. Res.* 1997. Vol. 12, No. 12, P. 3328-3344.

504 Structure and electronic properties of graphite nanoparticles. **Andersson O.E., Prasad B.L.V., Sato H., Enoki T., Kaburagi H., Hishiyama Y., Yoshikawa M., Bandow S.** *Phys. Rev. B.* 1998. Vol. 58, P. 16387-16395.

505 Synthesis of carbyne from amorphous line-chain carbon and pyrographite. **Guseva M.B., Babina V.M., Boustie M., Fortov V.E., Romain J.P., Zhuk A.Z., Babaev V.G., Khvostov V.V.** P. 15-20 in book: Lasers in Synthesis, Characterization, and Processing of Diamond. Eds: Konov V.I., Ralchenko V.G., 256 pages (1998).

506 Graphite encapsulated nanocrystals produced using a low carbon/metal ratio. **Host J.J., Teng M.H., Elliott B.R., Hwang J.-H., Mason T.O., Johnson D.L., Dravid V.P.** *J. Mater. Res.* 1997. Vol. 12, No. 5, P. 1268-1273.

507 Carbon nanostructures in silica aerogel composites. **Song X.-Y., Cao W., Ayers M.R., Hunt A.J.** *J. Mater. Res.* 1995. Vol. 10, No. 2, P. 251-254.

508 Microscopic structure of hydrogenated amorphous carbon. **Iarlori S., Galli G., Martini O.** *Phys. Rev.* B. 1994. Vol. 49, P. 7060-7063.

509 Topographical changes induced by high dose carbon-bombardment of graphite. **Annis K., Pedraza D.F., Withrow S.P.** *J. Mater. Res.* 1993. Vol. 8, No. 10, P. 2587-2589.

510 Reconstruction of diamond (111). **Iarlori S., Galli G., Gygi F., Parrinello M., Tosatti E.** *Phys. Rev. Lett.* 1992, Vol. 69, P. 2947-2950.

See also **134, 197, 201, 243, 244**

➢ 10.02. Carbon onions

511 Continuum elastic model of fullerenes and the sphericity of the carbon onion shells. **Ahmad S.** *J. Chem. Phys.* 2002. Vol. 116, No. 8. P. 3396-3400.

512 Diamond nanoparticles to carbon onions transformation: X-ray diffraction studies. **Tomita S., Burian A., Dore J.C., leBolloch D., Fujii M., Hayashi S.** *Carbon.* 2002. Vol. 40, P. 1469-1474.

513 Electron microscopy study of carbon onions synthesized by ion implantation. **Cabioc'h T., Thune E., Jaouen M., Banhart F.** *Philos. Mag. A.* 2002. Vol. 82, No. 8, P. 1509-1520.

514 Formation of multishell fullerenes from vaporized carbons. **Mordkovich V.Z., Shiratori Y., Hiraoka H., Takeuchi Y., Endo M.** *Mol. Cryst. Liq. Cryst.* 2002. Vol. 386, P. 103-107.

515 In situ TEM observation of nucleation and growth of spherical graphitic clusters under ion implantation. **Abe H., Yamamoto S., Miyashita A.** *J. Electron Microsc.* 2002. Vol. 51, P. S183-S187.

516 Mechanisms involved in the formation of onionlike carbon nanostructures synthesized by ion implantation at high temperature. **Cabioc'h T., Thune E., Jaouen M.** *Phys. Rev. B.* Vol. 65, No. 13, art. no.-132103.

517 Nucleation and growth of carbon onions synthesized by ion-implantation: a transmission electron microscopy study. **Thune E., Cabioc'h T., Guerin P., Denanot M.F., Jaouen M.** *Mater. Lett.* 2002. Vol. 54, No. 2-3. P. 222-228.

518 Optical extinction properties of carbon onions prepared from diamond nanoparticles. **Tomita S., Fujii M., Hayashi S.** *Phys. Rev.* B. 2002. Vol. 66, No. 24, P. 245424.

519 Properties of carbon onions produced by an arc discharge in water. **Sano N., Wang H., Alexandrou I., Chhowalla M., Teo K.B.K., Amaratunga G.A.J., Iimura K.** *J. Appl. Phys.* 2002. Vol. 92, No. 5, P. 2783-2788.

520 Structural transformations in carbon nanoparticles induced by electron irradiation. **Banhart F.** *Phys. Solid State.* 2002. Vol. 44, No. 3, P. 399-404.

521 Structure and properties of carbon onion layers deposited onto various substrates. **Cabioc'h T., Thune E., Riviere J.P., Camelio S., Girard J.C., Guerin P., Jaouen M., Henrard L., Lambin P.** *J. Appl. Phys.* 2002. Vol. 91, No. 3, P. 1560-1567.

522 The catalytic use of onion-like carbon materials for styrene synthesis by oxidative dehydrogenation of ethylbenzene. **Keller N., Maksimova N.I., Roddatis V.V., Schur M., Mestl G., Kuznetsov V.L., Butenko Y.V., Schlogl R.** *Angew. Chem. Int.* 2002. Vol. 41, No. 11, P. 1885-1888.

523 Topology and electronic structure of onion-like carbon and graphite/diamond nanocomposites. **Bulusheva L.G., Okotrub A.V., Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Heggie M.I.** *Mat. Res. Sym. Proc.* 2002. Vol. 703, P. 381-386.

524 Atomic structure and stability of elliptical carbon onion. **Kitahara H., Oku T., Suganuma K.** *Eur. Phys. J. D.* 2001. Vol. 16, No. 1-3, P. 361-363.

525 Electronic structure and optical properties of concentric-shell fullerenes from electron-energy-loss spectroscopy in transmission. **Pichler T., Knupfer M., Golden M.S., Fink J., Cabioc'h T.** *Phys. Rev. B.* 2001. Vol. 6315, No. 15, P. 5415, art. no. 155415.

526 Formation mechanisms for carbon onions and nanocapsules in C^+-ion implanted copper. **Abe H., Yamamoto S., Miyashita A., Sickafus K.E.** *J. Appl. Phys.* 2001. Vol. 90, No. 7, P. 3353-3358.

527 Nanotechnology - Synthesis of carbon 'onions' in water. **Sano N., Wang H., Chhowalla M., Alexandrou I., Amaratunga G.A.J.** *Nature.* 2001. Vol. 414, No. 6863, P. 506-507.

528 Nucleation of carbon onions and nanocapsules under ion implantation at high temperature. **Abe H.** *Diamond Relat. Mater.* 2001. Vol. 10, No. 3-7, P. 1201-1204.

529 Structure and electronic properties of carbon onions. **Tomita S., Sakurai T., Ohta H., Fujii M., Hayashi S.** *J. Chem. Phys.* 2001. Vol. 114, No. 17, P. 7477-7482.

530 Ultraviolet-visible absorption spectroscopy of carbon onions. **Tomita S., Hayashi S., Tsukuda Y., Fujii M.** *Physics of Solid State.* 2002. Vol. 44, P. 450-453.

531 Probing the electronic state of onion-like carbon. **Okotrub A.V., Bulusheva L.G., Romanenko A.I., Kuznetsov V.L., Butenko Yu.V., Dong C., Ni Y., Heggie M.I.** *AIP Conference Proceedings.* 2001. Vol. 591, No. 1, 349-352.

532 A new and simple method for thin graphitic coating of magnetic-metal nanoparticles. **Tomita S., Hikita M., Fujii M., Hayashi S., Yamamoto K.** *Chem. Phys. Lett.* 2000. Vol. 316, P. 361-364.

533 Formation of Co filled carbon nanocapsules by metal-template graphitization of diamond nanoparticles. **Tomita S., Hikita M., Fujii M., Hayashi S., Akamatsu K., Deki S., Yasuda H.** *J. Appl. Phys.* 2000. Vol. 88, P. 5452-5456.

534 Fullerenic carbon in combustion-generated soot. **Grieco W.J., Howard J.B., Rainey L.C., Vander Sande J.B.** *Carbon.* 2000. Vol. 38, P. 597-614.

535 Irradiation-induced transformation of graphite to diamond: A quantitative study. **Zaiser M., Lyutovich Y., Banhart F.** *Phys. Rev.* B. 2000. Vol. 62, No. 5, P. 3058-3064.

536 Spherical nanometer-sized diamond obtained from detonation. **Chen P.W., Ding Y.S., Chen Q., Huang F.L., Yun S.R.** *Diamond Relat. Mater.* 2000. Vol. 9, No. 9-10, P. 1722-1725.

537 Thin films of carbon nanocapsules and onion-like graphitic particles prepared by the cosputtering method. **Mamezaki O., Adachi H., Tomita S., Fujii M., Hayashi S.** *Jap. J. Appl. Phys.* 2000. Vol. 39, Part 1, No. 12A, P. 6680-6683.

538 Transformation of carbon onions to diamond by low-temperature heat treatment in air. **Tomita S., Fujii M., Hayashi S., Yamamoto K.** *Diamond Relat. Mater.* 2000. Vol. 9, No. 3-6, P. 856-860.

539 Concentric-shell fullerenes and diamond particles: A molecular-dynamics study. **Fugaciu F., Hermann H., Seifert G.** *Phys. Rev. B.* 1999. Vol. 60, No. 15, P. 10711-10714.

540 Electron energy-loss spectroscopy of carbon onions. **Fujii M., Yamamoto K., Hayashi S., Tomita S.** *Chem. Phys. Lett.* 1999. Vol. 305, No. 3-4, P. 225-229.

541 Investigation of carbon aggregates (onions) formed on copper under the conditions of diamond chemical vapour deposition. **Lenormand F., Constant L., Ehret G., Romeo M., Charai A., Saikaly W., Speisser C.** *Phil. Mag. A.* 1999. Vol. 79, No. 7, P. 1739-1756.

542 Irradiation effects in carbon nanostructures **Banhart F.** *Rep. Prog. Phys.* 1999. Vol. 62, P. 1181-1221.

543 Theoretical study of the formation of closed curved graphite-like structures during annealing of diamond surface. **Kuznetsov V.L., Zilberberg I.L., Butenko Yu.V., Chuvilin A.L., Segall B.** *J. Appl. Phys.* 1999. Vol. 86, No. 2, P. 863-870.

544 Closed curved graphite-like structures formation on micron-size diamond. **Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Gutakovskii A.K., Stankus S.V., Khairulin R.A.** *Chem.Phys.Lett.* 1998. Vol. 289, P. 353-360.

545 EELS study of the irradiation-induced compression of carbon onions and their transformation to diamond. **Banhart F., Ajayan P.M., Lyutovich Y., Redlich P.** *Carbon.* 1998. Vol. 36, No. 5-6, P. 561-563.

546 Onion-like and equilibrium structure of carbon. **Donnet J.-B., LeMoigne C., Wang T.K., Samirant M., Eckhardt A.** *Comptes Rendus de l'Académie des Sciences - Series IIC - Chemistry.* 1998. Vol. 1, No. 7, P. 431-434.

547 Raman identification of onion-like carbon. **Obraztsova E.D., Fujii M., Hayashi S., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L.** *Carbon.* 1998. Vol. 36, No. 5-6, P. 821-826.

548 Raman investigation of onion-like carbon. **Obraztsova E.D., Pimenov S.M., Konov V.I., Fujii M., Hayashi S., Kuznetsov V.L., Butenko Yu.V., Chuvilin A.L., Loubnin E.N.** *Molecular Materials.* 1998. Vol. 10, No. 1-4, P. 249-255.

549 The migration of metal atoms through carbon onions. **Banhart F., Redlich P., Ajayan P.M.** *Chem.Phys.Lett.* 1998. Vol. 292, P. 554-560.

550 Carbon onions as possible carriers of the 2175 A interstellar absorption bump. **Henrard L., Lambin Ph., Lucas A.A.** *Astrophys. J.* Pt. 1. 1997. Vol. 487, No. 2, P. 719-724.

551 Formation of diamond in carbon onions under MeV ion irradiation. **Wesolowski P., Lyutovich Y., Banhart F., Carstanjen H.D., Kronmuller H.** *Appl. Phys. Lett.* 1997. Vol. 71, No. 14, P. 1948-1950.

552 Radiation-induced transformation of graphite to diamond. **Zaiser M., Banhart F.** *Phys. Rev. Lett.* 1997, Vol. 79, P. 3680-3683.

553 Self-compression and diamond formation in carbon onions. **Banhart F. Ajayan P.M.** *Adv. Mater.* 1997. Vol. 9, No. 3, P. 261-263.

554 The transformation of graphitic onions to diamond under electron irradiation. **Banhart F.** *J. Appl. Phys.* 1997. Vol. 81, P. 3440-3445.

555 Carbon onion as nanoscopic pressure cell for diamond formation. **Banhart F., Ajayan P.M.** *Nature.* 1996. Vol. 382, P. 433-435.

556 Onion-like graphitic particles. **Ugarte D.** *Carbon.* 1995. Vol. 33, No. 7, P. 989-993.

557 High-temperature behaviour of "Fullerene-black". **Ugarte D.** *Carbon.* 1994. Vol. 32, No. 7, P. 1245-1248.

558 Onion-like carbon from ultra-disperse diamond. **Kuznetsov V.L., Chuvilin A.L., Butenko Yu.V., Malkov I.Yu., Titov V.M.** *Chem. Phys. Lett.* 1994. Vol. 222, P. 343-348.

559 Formation mechanism of quasi-spherical carbon particles induced by electron bombardment. **Ugarte D.** *Chem. Phys. Lett.* 1993. Vol. 207, No. 4-6, P. 473-479.

560 Raman spectroscopy of closed-shell carbon particles. **Bacsa W.S., DeHeer W.A., Ugarte D.** *Chem. Phys. Lett.* 1993. Vol. 211, No. 4-5, P. 346-352.

561 Curling and closure of graphitic networks under electron-beam irradiation. **Ugarte D.** Nature. 1992. Vol. 359, P. 707-709.

See also **044, 113, 169, 195, 200, 233, 241, 618**

11. Diamond Nanorods

562 Ab initio modelling of diamond nanowire structures. **Barnard A.S., Russo S.P., Snook I.K.** *Nano Letters.* 2003, in press.

563 Ab initio modelling of B and N in diamond nanowires. **Barnard A.S., Russo S.P., Snook I.K.** *Phil. Mag.* 2003, accepted.

564 Ab initio modelling of dopants in diamond nanowires: Part II. **Barnard A.S., Russo S.P., Snook I.K.** *Phil. Mag.* 2003, accepted.

565 Would diamond nanorods be stronger than fullerene nanotubes? **Shenderova O., Brenner D., Ruoff R.S.** *Nano Letters.* 2003, in press.

566 Surface structure of cubic diamond nanowires. **Barnard A.S., Russo S.P., Snook I.K.** submitted for publication to Surf. Sci. 2002, in press.

567 Synthesis of well aligned diamond nanocylinders. **Masuda H., Yanagishita T., Yasui K., Nishio K., Yagi I., Rao T.N., Fijishima A.** *Adv. Mat.* 2001. Vol. 13, P. 247.

568 Aligned diamond nanowhiskers. **Baik E.-S., Baik Y.-J., Jeon D.** *J. Mater. Res.* 2000. Vol. 15, No. 4, P. 923-926.

569 Direct conversion to diamond and BN nanotube growth in nitrogen fluid: nanoscopic observation of laser-heated samples in diamond anvil cell. **Yusa H.** *New Diamond Front. Carbon Technol.* 2000. Vol. 10, No. 5, P. 301-312.

570 Fabrication of diamond nano-whiskers. **Baik E.-S., Baik Y.-J., Lee S.W., Jeon D.** *Thin Solid Films.* 2000. Vol. 377-378, P. 295-298.

571 Conversion of nickel coated carbon nanotubes to diamond under high pressure and high temperature. **Han W., Fan S., Li Q., Zhang C.L.** *J. Appl. Phys. Lett.* 1998. Vol. 37, No. 9A/B, P. L1085-L1086.

572 Diamond needles and tips as engineered growth shapes. **Cherian K.A., Litster J., Rudolph V., White E.T.** *Mater. Res. Soc. Symp. Proc.* 1996. Vol. 416, P. 241-247.

12. Nanodiamonds in Nature

573 Alteration of interstellar organic materials in meteorites' parent bodies: a novel route for diamond formation. **Nakano H., Kouchi A., Arakawa M., Kimura Y., Kaito C., Ohno H., Hondoh T.** Proceedings of the Japan Academy Ser. B - *Physical and Biological Sciences.* 2002. Vol. 78, No. 9, P. 277-281.

574 Laboratory investigation of hydrogenated diamond surfaces: Implications for the formation and size of interstellar nanodiamonds. **Sheu S.Y., Lee I.P., Lee Y.T., Chang H.C.** *Astrophys. J. Part* 2. 2002. Vol. 581, No. 1, P. L55-L58.

575 Nanodiamonds around HD 97048 and Elias 1. **Van Kerckhoven C., Tielens A.G.G.M., Waelkens C.** *Astron. Astrophys.* 2002. Vol. 384, No. 2, P. 568-584.

576 Possible in situ formation of meteoritic nanodiamonds in the early solar system. **Dai Z.R., Bradley J.P., Joswiak D.J., Brownlee. D.E., Hill H.G.M., Genge M.J.** *Nature.* 2002. Vol. 418, No. 6894, P. 157-159.

577 Some features of nitrogen release from presolar diamond fractions of the Efremovka meteorite. **Fisenko A.V., Verchovsky A.B., Semenova L.F., Pillinger C.T.** *Geochemistry International.* 2002. Vol. 40, No. 9, P. 914-918.

578 The size of interstellar nanodiamonds revealed by infrared spectra of CH on synthetic diamond nanocrystal surfaces. **Chen C.-F., Wu C.-C., Cheng C.-L., Sheu S.-Y., Chang H.-C.** *J. Chem. Phys.* 2002. Vol. 116, No. 4, P. 1211-1214.

579 Aromatic hydrocarbons, diamonds, and fullerenes in interstellar space: puzzles to be solved by laboratory and theoretical astrochemistry. **Sellgren K.** *Spectrochim. Acta. A.* 2001. Vol. 57, No. 4, P. 627-642.

580 Isotope anomalies in tellurium and palladium from allende nanodiamonds. **Maas R., Loss R.D., Rosman K.J.R., De Laeter J.R., Lewis R.S., Huss G.R., Lugmair G.W.** *Meteoritics & Planetary Science.* 2001. Vol. 36, No. 6, P. 849-858.

581 'Isotopically strange xenon' in meteoritic nanodiamonds: Implantation by stellar winds? **Heymann D.** *Astrophys. Space Sci.* 2001. Vol. 275, No. 4, P. 415-423.

582 History of trace gases in presolar diamonds inferred from ion-implantation experiments. **Koscheev A.P., Gromov M.D., Mohapatra R.K., Ott U.** *Nature.* 2001. Vol. 412, No. 6847, P. 615-617.

583 Infrared, ultraviolet, and electron paramagnetic resonance measurements on presolar diamonds: Implications for optical features and origin. **Braatz A., Ott U., Henning T., Jager C., Jeschke G.** *Meteoritics & Planetary Science.* 2000. Vol. 35, No. 1, P. 75-84.

584 Interstellar diamond: The analysis results for carbon, nitrogen, and noble gases in different grain-size fractions. **Fisenko A.V., Verhovsky A.B., Semjonova L.F., Pillinger C.T.** *Solar System Research.* 2000. Vol. 34, No. 1, P. 20-36.

585 Interstellar nanodiamonds: the carriers of mid-infared emission bands? **Jones A.P., d'Hendecourt L.** *Astron. Astrophys.* 2000. Vol. 355, No. 3, P. 1191-1194.

586 Earth and planetary sciences: a diamond trylogy: superplumes, supercontinents and supernovae. **Haggerty S.E.** *Science.* 1999. Vol. 285, No. 5429, P. 851-854.

587 Neutrino fluence after r-process freezeout and abundances of Te isotopes in presolar diamonds. **Qian Y.-Z., Vogel P., Wasserburg G.J.** *Astrophys. J.* 1999. Vol. 513, P. 956-960.

588 Carbon - carbon in the universe. **Henning T., Salama F.** *Science.* 1998. Vol. 282, No. 5397, P. 2204-2210.

589 Carbon - From space to laboratory. **Henning T., Schnaiter M.** *Earth Moon and Planets.* 1998. Vol. 80, N. 1-3, P. 179-207.

590 High enrichment of carbon and volatile elements in the surface layers of Luna 16 soil sample 1635: Result of comet or meteorite impact? **Dikov Yu.P., Ivanov A.V., Wlotzka F., Galimov E.M., Wanke H.** *Earth and Planetary Science Letters.* 1998. Vol. 155, No. 3-4, P. 197-204.

591 C, N, and Noble Gas Isotopes in Grain Size Separates of Presolar Diamonds from Efremovka. **Verchovsky A.B., Fisenko A.V., Semjonova L.F., Wright I.P., Lee M.R., Pillinger C.T.** *Science.* 1998. Vol. 281, P. 1165-1168.

592 Infrared spectroscopy of interstellar nanodiamonds from the Orgueil meteorite. **Hill H.G.M., d'Hendecourt L.B., Perron C., Jones A.P.** *Meteorit. Planet. Sci.* 1997. Vol. 32, P. 713-718.

593 Interstellar diamond in Allende SUZ: a comparative analysis from the oxidation kinetics data. **Fisenko A.V., Tatsij V.F., Semjonova L.F., Kashkarov L.L.** *Astronom. vestnik.* 1997. Vol. 31, No. 1, P. 82-90.// Межзвездный алмаз в Allende СУЗ: Сравнительный анализ по кинетике окисления. **Фисенко А.В., Таций В.Ф., Семёнова Л.Ф., Кашкаров Л.Л.** *Астроном. вестник.* 1997. Т. 31, № 1, С. 82-90.

594 Genesis of presolar diamonds: Comparative high-resolution transmission electron microscopy study of meteoritic and terrestrial nano-diamonds. **Daulton T.L., Eisenhour D.D., Bernatowicz T.J., Lewis R.S., Buseck P.R.** *Geochim. Cosmochim. Acta.* 1996. Vol. 60, No. 23, P. 4853-4872.

595 Facts and artifacts in interstellar diamond spectra. **Mutschke H., Dorschner J., Henning Th., Jaeger C., Ott U.** *AstrophysJ.* 1995. Vol. 454, P. L157 - L160.

596 Multiple diamond components in Acfer 182. **Grady M.M., Lee M.R., Arden J.W., Pillinger C.T.** *Earth and Planetary Science Letters.* 1995. Vol. 136, No. 3-4, P. 677-692.

597 Noble gases in presolar diamonds I: three distinct components and their implications for diamond origins. **Huss G.R., Lewis R.S.** *Meteorites.* 1994. Vol. 29, P. 791-810.

598 "Diamonds" in the dense molecular clouds: a challenge to the standard interstellar paradigm. **Allamandola L.J., Sandford S.A., Tielens A.G.G.M., Herbst T.M.** *Science.* 1993. Vol. 260, P. 64-60.

599 Intersteller grains in meteorites. **Ott U.** *Nature.* 1993. Vol. 364, P. 25-33.

600 Intersteller grains in primitive meteorites: diamond, silicon carbide, and graphite. **Anders E.B., Zinner E.** *Meteorites.* 1993. Vol. 28, P. 490-514.

601 Origin of nanodiamonds in primitive chondrites (1) Theory. **Ozima M, Mochizuki K.** *Meteorites.* 1993. Vol. 28, P. 416-417.

602 Supernovae as sources of interstellar diamonds. **Nuth J.A.III, Allen J.E.** *J. Astrophys. Space. Sci.* 1992. Vol. 196, P. 117-123.

See also **001, 003, 005, 006, 352, 550**

13. Inventions and Patents

603 Diamond/carbon nanotube structures for efficient electron field emission. **Dimitrijevic S., Withers J., Loutfy R**. US Patent Application 20010024078 from 09.27.2001

604 Method of producing a composite more precisely a nanoporous body and a nanoporous body produced thereby. **Gordeev S., Zhukov S., Belobrov P., Smolianinov A., Dikov I.** US Patent N6083614 from 04.07.2000.

605 A way of separating nanodiamond from non-diamond carbon. **Kovrigin S.A., Migin A.N., Uvarov S.V.** Russian Patent N2132816 from 10.07.99. // Способ очистки ультрадисперсного алмаза от неалмазного углерода. **Ковригин С.А., Мигин А.Н., Уваров С.В.** Патент Российской Федерации N2132816 от 10.07.99.

606 Technique for the fabrication of bulk porous diamond. **Bates S.**, US Patent N5885541, Apr. 23, 1999.

607 Field emission devices employing diamond particle emitters. **Jin S., Kochanski G.P., Zhu W.** US Patent N5977697, Nov. 2, 1999.

608 Synthetic diamond-containing material and method of obtaining it from **Vereschagin A.L., Petrov E.A., Sakovich G.V., Komarov V.F., Klimov A.V., Kozyrev N.V.** US Patent N5861349, Jan. 19, 1999.

609 Method of making field emission devices employing ultra-fine diamond particle emitters. **Jin S., Kochanski G.P., Zhu W.** US Patent 5709577, Jan. 20 (1998).

610 Method for the preparation of nanocrystalline diamond thin films. **Gruen D**. US Patent N5772760, Jun. 30 (1998).

611 A modified nanodiamond suspension. **Zalyaliev M.M., Nadeeva F.I., Xabibullin I.G.** Russian Patent N 2094371 prioriget from 20.12.91 *Billyuten' Izobretenij.* 1997. No. 30. P. 241. // Суспензия ультрадисперсного модифицированного алмаза. **Залялиев М.М., Надеева Ф.И., Хабибуллин И.Г.** Патент Российской Федерации N 2094371 приоригет от 20.12.91 *Биллютень изобретений*. 1997. № 30. С. 241.

612 A technology for nanodiamond purification. **Filatov L.I., Chukhaeva S.I., Detkov P.Ya.** Russian Patent N2077476 from 20.04.97. // Способ очистки ультрадисперсных алмазов. **Филатов Л.И., Чухаева С.И., Детков П.Я.** Патент Российской Федерации N2077476 от 20.04.97.

613 A technology for nanodiamond separation. **Eryomenko N.K., Obraztsova I.I., Efimov O.A., Korobov Yu.A., Safonov Yu.N., Sidorin Yu.Yu.** Russian Patent N2081821 from 20.06.97. // Способ отделения ультрадисперсного алмаза. **Ерёменко Н.К., Образцова И.И., Ефимов О.А., Коробов Ю.А., Сафонов Ю.Н., Сидорин Ю.Ю.** Патент Российской Федерации N2081821 от 20.06.97.

614 A way of nanodiamond removal from an aqueous suspension. **Vasilishin M.S., Bratilov B.I., Petrov E.A., Svetlov S.A.** Russian Patent N2083490 from 10.07.97. // Способ выделения ультрадисперсных алмазов из водной суспензии. **Василишин М.С., Братилов Б.И., Петров Е.А., Светлов С.А.** Патент Российской Федерации N2083490 от 10.07.97.

615 An antifriction additive. **Nikitin E.V., Slyusarev S.Ya., Filippova E.V., Danilov A.I., Skryabin Yu.A.** Russian Patent N2054456 from 20.02.1996. // Антифрикционная присадка. **Никитин Е.В., Слюсарев С.Я., Филиппова Е.В., Данилов А.И., Скрябин Ю.А.** Патент Российской Федерации N 2054456 от 20.02.1996.

616 A polishing paste. **Martonik M.V., Red'kin V.E., Staver A.M.** Russian Patent N2058359 from 20.04.96. // Полировальная паста. **Мартоник М.В., Редькин В.Е., Ставер А.М.** Патент Российской Федерации N2058359 от 20.04.96.

617 A technology for removal of nanodiamonds from stable aqueous suspensions. **Ovcharenko A.G., Gubarevich T.M., Sataev P.P., Brylyakov P.M.** Russian Patent N1614354 from 10.01.96. // Способ выделения ультрадисперсных алмазов из устойчивых водных суспензий. **Овчаренко А.Г., Губаревич ТМ, Сатаев Р.Р., Брыляков П.М.** Патент Российской Федерации N1614354 от 10.01.96.

618 A way of producing onion carbon. **Titov V.M., Mal'kov I.Yu., Kuznetsov V.L., Chuvilin A.L.** Patent Application in Russia N 93048251 from 20.06.1996. // Способ получения частиц углерода луковичной структуры. **Титов В.М., Мальков И.Ю., Кузнецов В.Л., Чувилин А.Л.** Заявка РФ N93048251 от 20.06.1996.

619 Carbon composition production process. **Guschin V.A., Zakharov A.A., Lyamkin A.I., Staver A.M.** US Patent N5482695, Jan. 9 (1996).

620 Diamond-containing material and its production technology. **Vereschagin A.L., Petrov E.A., Sakovich G.V., Komarov V.F., Klimov A.V., Kozyrev N.V.** Russian Patent N2051092 from 27.12.95. // Алмазосодержащее вещество и способ его получения. **Верещагин А.Л., Петров Е.А, Сакович Г.В., Комаров В.Ф., Климов А.В., Козырев Н.В.** Патент Российской Федерации N2051092 от 27.12.95.

621 A grinding and polishing composition. **Martonik M.V., Primacheva L.G., Red'kin V.E., Staver A.M.** Russian Patent N2005758 from 15.01.94. // Шлифовально-полировальный состав. **Мартоник М.В., Примачева Л.Г., Редькин В.Е., Ставер А.М.** Патент Российской Федерации N2005758 от 15.01.94.

622 A liquid cooling lubricant for mechanical treatment of metals. **Red'kin V.E., Staver A.M., Shangin A.P.** Russian Patent N2009186 from 15.03.94. // Смазочно-охлаждающая жидкость для механической обработки металлов. **Редькин В.Е., Ставер А.М., Шангин А.П.** Патент Российской Федерации N2009186 от 15.03.94.

623 A nanodiamond separation technology. **Ovcharenko A.G., Gubarevich T.M., Sataev P.P., Brylyakov P.M., Solohina A.B., Ignatchenko A.V.** Russian Patent N2019500 from 15.09.94. // Способ выделения ультрадисперсных алмазов. **Овчаренко А.Г., Губаревич Т.М., Сатаев Р.Р., Брыляков П.М., Солохина А.Б., Игнатченко А.В.** Патент Российской Федерации N2019500 от 15.09.94.

624 A technology for removal of nanodiamonds from stable aqueous suspensions. **Ovcharenko A.G., Brylyakov P.M., Sataev P.P., Gubarevich T.M.** Russian Patent N1792915 from 7.02.93. // Способ выделения ультрадисперсных алмазов из устойчивых водных суспензий. **Овчаренко А.Г., Брыляков П.М., Сатаев Р.Р., Губаревич Т.М.** Патент Российской Федерации N1792915 от 7.02.93.

625 A way of producing a nanodiamond-strenthened material. **Kozharskij S.P., Komarov V.F., Potapov M.G., Petrov E.A., Sakovich G.V., Shalyuta V.N.** Russian Patent N2001718 from 30.10.1993. // Способ получения дисперсноупрочненного материала. **Кожарский С.П., Комаров В.Ф., Потапов М.Г., Петров Е.А., Сакович Г.В., Шалюта В.Н.** Патент Российской Федерации N2001718 от 30.10.1993.

626 Purification of detonation diamond. **Chiganov A.S., Chiganova G.A., Tushko Yu.M., Staver A.M.** Russian Patent N2004491 from 15.12.93. // Способ очистки детонационного алмаза. **Чиганов А.С., Чиганова Г.А., Тушко Ю.М., Ставер А.М.** Патент Российской Федерации N2004491 от 15.12.93.

627 Synthesis of diamond powders in the gas phase. **Frenklach M.Y., Spear K.E., Koba R.J.** U.S. Patent N5087434, Feb. 11, 1992.

628 A diamond purification technology. **Gubarevich T.M., Larionova I.S., Kostyukova N.M., Ryzhko G.A., Turitsyna O.F., Pleskach L.I., Sataev P.P.** Avt. Svid. USSR N1770272 from 22.06.92. // Способ очистки алмаза. **Губаревич Т.М, Ларионова И. С., Костюкова Н.М., Рыжко Г.А., Турицына О.Ф., Плескач Л.И., Сатаев Р.Р.** Авт. свид. СССР N1770272 от 22.06.92.

629 An abbrasive diamond suspension. **Zakharov A.A., Red'kin V.E., Staver A.M.** Russian Patent N1781271 from 15.12.92. // Алмазная абразивная суспензия. **Захаров А.А., Редькин В.Е., Ставер А.М.** Патент Российской Федерации N1781271 от 15.12.92.

630 A lubricating composition. **Prihod'ko E.E., Stepanova N.V., Brylyakov P.M.** Russian Patent № 2028370 from 18.02.92. // Смазочный состав. **Приходько Е.Е., Степанова Н.В., Брыляков П.М.** Патент Российскsой Федерации N2028370 от 18.02.92.

631 A nanodiamond-containing composition and its production. **Korobov D.Yu., Korobov Yu.A.** Russian Patent N2049723 prioritet from 19.05.92. *Billyuten' izobretenij.* 1995. No. 3, P. 144. // Дисперсная алмазосодержащая композиция и способ её получения. **Коробов Д.Ю., Коробов Ю.А.** Патент Российской Федерации N2049723 приоритет от 19.05.92. *Биллютень изобретений.* 1995. № 3, С. 144.

632 A technology for purification of nanodiamonds from non-diamond carbon. **Gubarevich T.M., Larionova I.S., Sataev P.P., Dolmatov V.Yu., Pyaterikov V.F.** Avt. Svid. USSR N1819851 from 12.10.92. // Способ очистки ультрадисперсных алмазов от неалмазного углерода. **Губаревич Т.М., Ларионова И.С., Сатаев Р.Р., Долматов В.Ю., Пятериков В.Ф.** Авт. свид. СССР N1819851 от 12.10.92.

633 A way of separating synthetic nanodiamonds. **Dolmatov V.Yu., Suschev V.G., Aleksandrov M.M., Sakovich G.V., Vishnevskij E.N., Pyaterikov V.F., Sataev P.P., Komarov V.F., Brylyakov P.M., Shitenkov N.V.** Avt. Svid. USSR N1828067 from 13.10.92. // Способ выделения синтетических ультрадисперсных алмазов. **Долматов В.Ю., Сущев В.Г., Александров М.М., Сакович Г.В., Вишневский Е.Н., Пятериков В.Ф., Сатаев Р.Р., Комаров В.Ф., Брыляков П.М., Шитенков Н.В.** Авт. свид. СССР N1828067 от 13.10.92.

634 Diamond-based antifriction material. **Yashchenko N.K., Ogorodnik V.V.** US Patent N5158695, Oct. 27, 1992.

635 Purification of diamond-containing mixtures. **Gubarevich T.M., Larionova I.S., Ryzhko G.A., Kostyukova N.M., Sataev P.P.** Avt. Svid. USSR N1830883 from 13.10.92. // Способ очистки алмазсодержащей шихты **Губаревич Т.М., Ларионова И.С, Рыжко Г.А., Костюкова Н.М., Сатаев Р.Р.** Авт. свид. СССР N1830883 от 13.10.92.

636 Purification of nanodiamonds from non-diamond carbon. **Gubarevich T.M., Larionova I.S., Sataev P.P., Dolmatov V.Yu., Pyaterikov V.F.** Avt. Svid. USSR N1819851 from 12.10.92. // Способ очистки ультрадисперсных алмазов от неалмазного углерода. **Губаревич Т.М., Ларионова И.С., Сатаев Р.Р., Долматов В.Ю.,Пятериков В.Ф.** Авт. свид. СССР N1819851 от 12.10.92.

637 A technology for purification of diamond powder from surface impurities. **Gubarevich T.M. Larionova I.S., Kostyukova N.M., Sataev P.P., Brylyakov P.M., Dolmatov V.Yu., Suwev V.T., Aleksandrov M.M.** Avt. Svid. USSR N1658558 from 22.02.91. // Способ очистки порошка алмаза от поверхностных примесей. **Губаревич Т.М., Ларионова И.С., Костюкова Н.М., Сатаев Р.Р., Брыляков П.М., Долматов В.Ю., Сущев В.Т., Александров М.М.** Авт. свид. СССР N1658558 от 22.02.91.

638 A way of purifying nanodiamonds. **Gubarevich T.M., Kostyukova N.M., Sataev P.P., Larionova I.S., Brylyakov P.M.** Avt. Svid. USSR N1538430 from 15.09.89. // Способ очистки ультрадисперсных алмазов. **Губаревич Т.М., Костюкова Н.М., Сатаев Р.Р., Ларионова И.С., Брыляков П.М.** Авт. свид. СССР N1538430 от 15.09.89.

639 Method for forming diamonds from carbonaceous material. **Daulton T.; Lewis R., Rehn L., Kirk M.** US Patent N6,315,871, Nov. 13, 2001.

640 Method of dehalogenation using diamonds. **Farcasiu M., Kaufman P., Ladner E.** US Patent N6,143,939, Nov. 7, 2000.

641 Photochemically modified diamond surfaces,and method of making the same. **Miller J.** US Patent N5,593,783, Jan. 14, 1997.

642 Method for production of ultradispersed diamond. **Stavrev S., Lazarov S., Stoev K., Markov L., Ivanov V.** US Patent N4. 5,353,708, Oct. 11, 1994.

14. Companies and Centres are presently working in the field of detonation nanodiamonds (e-mail addresses and/or websites)

1. **"Alit" Ltd**, Kiev, Ukraine
   E-mail: vp@alit.kiev.ua
   http://www.alit.kiev.ua

2. **"Alitex Ltd"**, Prague, Czech Republic
   E-mail: alitex@volny.cz

3. **Bakul Institute for Superhard Materials**, Kiev, Ukraine
   E-mail: shtm@ism.kiev.ua
   http://www.ism.kiev.ua

4. **Carbo Get GmbsH**, Baesweiler, Germany
   E-mail: info@carbo-tec.de

5. **Diamond Centre**, St. Petersburg, Russia
   E-mail: alcen@comset.net
   http://www.nanodiamond.spb.ru

6. **Federal State Unitary Enterprise "Special Design and Technological Office "Technolog"**, St. Petersburg, Russia
   E-mail: alcen@comset.net

7. **Federal Research and Production Centre "Altay"**, Biysk, Russia
   E-mail: post@frpc.secna.ru

8. **JSC "DISARM"**, St. Petersburg, Russia
   E-mail: disarm@vilan.spb.ru

9. **Institute of Machine Reliability**, Minsk, Republic Belarus
   E-mail: nanotech@inmash.bas-net.by
   diamond@inmash.bas-net.by

10. **Mineralien-Werke Kuppenheim GmbH**, Kuppenheim, Germany
    E-mail: verkauf-mwk@mineralien-werke.de
    http:// www.mineralien-werke.de

11. **Nanodiamond.com**, Massagno, Switzerland
    E-mail: contact@nanodiamond.com
    http://www.nanodiamond.com

12. **PlasmaChem GmbH**, Mainz, Germany
    http://www.plasmachem.de

13. **Shenzhen JINGANGYUAN New Material Co., Ltd.**, Japan
    E-mail: root@newnanomaterial.com
    http://www.newnanomaterial.com

14. **Ultradiamond Technologies Inc**, Somerville, MA, USA
    E-mail: info@ultradiamondtech.com
    http://www.ultradiamondtech.com

15. **Vision Development Co., Ltd**, Tokyo, Japan
    E-mail: k-vision@rapid.ocn.ne.jp
    http://www7.ocn.ne.jp/~k-vision/

16. **Vollstaedt Diamant GmbH**, Seddin, Germany
    E-mail: http://www.vollstaedt-diamant.de/

17. **"WOOIN NANOTECH, Co.Ltd"**, Seoul, Korea
    E-mail: godmik@hotmail.com

15. Scientific groups are presently working in the field of detonation nanodiamond (websites or/and e-mail addresses)

Australia

1. **Royal Melbourne Institute of Technology**, Melbourne
   (Barnard A.S., Russo S.P, Snook I.K.)
   E-mail: amanda.barnard@rmit.edu.au
   http:// www.rmit.edu.au

2. **University of Melbourne**, Parkville
   (Prawer S., Nugent K.W., Jamieson D.N., Orwa J.O., Bursill L.A., Peng J.L.)
   E-mail: s.prawer@physics.unimelb.edu.au
   http://www.unimelb.edu.au

People's Republic of China

3. **Institute of Mechanics of Chinese Academy of Sciences**, Beijing
   (Chen P.W.)
   E-mail: pwchen@imech.ac.cn

4. **Jilin University**, Changchun
   (Jiang Q., Liu H.W., Gao C.X.)
   E-mail: jiang@jlu.edu.cn
   liuhw@mail.jlu.edu.cn
   sklshm@mail.jlu.edu.cn

5. **Lanzhou University**, Lanzhou
   (He Deyan, Shao Lexi, Gong Weibin)
   E-mail: hedy@lzu.edu.cn

6. **Lanzhou Institute of Chemical Physics**
   (Xu Kang)
   E-mail: kaNGXU@lsl.ac.cn

7. **Zhongshan University**, Guangzhou
   (Chen J., Deng S.Z., Chen J., Yu Z.X., Xu N.S.)
   E-mail: stsxns@zsu.edu.cn

Finland

8. **OY ITCC Ltd International Trade Centre Corporation**, Helsinki
(Norlamo P., Gerchoun O.)
E-mail: vaunti@co.inet.fi

France

9. **Ecole Nationale Superieure de Chimie**, Mulhouse,
(Donnet J.-B)
E-mail: jb.donnet@igclab.com

Germany

10. **Dr. Ulrich Gerling Co.GmbH**, Hilden
(Gerling U., Gath W.)
E-mail: gaeth@dgc-gmbh.com
http://www.dgc-gmbh.com

11. **VTT GmbH - Verschleißteil Technik**, Langenhagen,
(Post H.),
E-mail: info@vtt.de

8. **Z.E. Elektronenmikroskopie, Universitat Ulm,** 89069 Ulm,
(Banhart F.)
E-mail: Florian.Banhart@physik.uni-ulm.de

Japan

13. **Kobe University**
(Hayashi S., Fujiie M., Akamatsu K., Deki S.)
E-mail: hayashi@eedept.kobe-u.ac.jp

14. **Nanocarbon Research Institute Ltd**., Chiba
(Osawa E.)
E-mail: osawa@nano-carbon.com
http://www.nano-carbon.com/index2.htm

15. **Nanomaterial Processing Laboratory**, RIKEN, Saitama
(S. Tomita)
E-mail: s-tomita@riken.go.jp

16. **Tokyo Institute of Technology**, Tokyo
(Enoki T., Affoune A.M., Prasad B.L.V., Sato H.)
E-mail: tenoki@chem.titech.ac.jp

17. **Japan Atomic Energy Research Institute**, Takasaki Branch
(Naramoto H.)
E-mail: naramoto@taka.jaeri.go.jp

Republic Belarus

18. **Engineering Centre "Plasmoteg"**, Minsk,
(Kurmashev V.I.)
E-mail: pec@mserv.bas-net.by

19. **Joint Stock Company "Sinta"**, Minsk
(Gubarevich T.)
E-mail: sinta92@yandex.ru

Russia

20. **Biysk Technological Institute**, Biysk
(Vereshchagin A.L.)
E-mail: val@bti.secna.ru

21. **Boreskov Institute of Catalysis**, Novosibirsk
(Butenko Y.V., Kuznetsov V.L., Zilberberg I.L., Chuvilin A.L.)
E-mail: vkuz@catalysis.nsk.su
kuznet@catalysis.nsk.su
butenko@catalysis.nsk.su

22. **Central Research Institute of Materials**, St. Petersburg
(Gordeev S.K.),
E-mail: carbid@pop3.rcom.ru

23. **Federal Research Production Center "Altay"**, Biysk
(Petrov E., Sakovich G.)
E-mail: post@frpc.secna.ru
evg@frpc.secna.ru

24. **Institute of Biophysics SB RAS**, Krasnoyarsk
(Belobrov P.I.)
E-mail: pit@ktk.ru

25. **Institute of General Physics RAS**, Moscow
(Ralchenko V.G., Vlasov I., Obraztsova E.D.),
E-mail: ralchenko@nsc.gpi.ru
ralchen@kapella.gpi.ru
vlasov@kapella.gpi.ru
elobr@kapella.gpi.ru

26. **Institute for Hydrodynamics**, Novosibirsk
(Titov V.M., Ten K.A.) ,
E-mail: titov@hydro.nsc.ru
ten@ hydro.nsc.ru

27. **Institute of Inorganic Chemistry**, Novosibirsk
(Yur'ev G.S., Okotrub A.V., Bulusheva L.G.)
E-mail: spectrum@che.nsk.su

28. **Institute of Physical Chemistry**, Moscow
(Spitsyn B.V.),
E-mail: lmm@phyche.ac.ru;

29. **Ioffe Physico-Technical Institute RAS**, St. Petersburg
(Vul' A.Ya., Aleksenskii A.E., Baidakova M.V., Dideikin A.T., Yagovkina M.A., Osipov V.Yu., Siklitsky V.I.)
E-mail: AlexanderVul@mail.ioffe.ru
http://www.ioffe.ru

30. **Krasnoyarsk Scientific Centre SB RAS**, Krasnoyarsk
(Koretz B.)
E-mail: prcom@kgtu.runnet.ru

31. **Krasnoyarsk Science Centre**, Krasnoyarsk
(Chiganova G.A., Chiganov A.S.)
E-mail: Chiganov@akadem.ru
vepom@kgtu.runnet.ru

32. **Moscow State University**, Moscow
(Kulakova I.I.)
E-mail: Kulakova@petrol.chem.msu.ru

33. **Lebedev Physical Institute**, Moscow
(Gorelik V.S., Artjomov A.S.),
E-mail: artpol@mail1.lebedev.ru

34. **Scientific Research Institute for Synthetic Rubber**, St. Petersburg
(Vozniakovskii A.P.),
E-mail: alcen@comset.net

35. **Ulyanovsk State University**, Ulyanovsk
(Mikov S.N., Igo A.V.)
E-mail: mkov@sv.uven.ru

Ukraine

36. **Bakul Institute for Superhard Materials**, Kiev
(Bogatyreva G.P., Bochechka A.A.)
E-mail: bogatyreva@ism.kiev.ua
ism1@kibor.kiev.ua

USA

37. **Argon National Laboratory**
(Gruen D., Aucello O.,Carlisle J.)
E-mail: gruen@anlchm.chm.anl.gov
http:// www.anl.gov

38. **Case Western Reserve University**, Cleveland
(Segall B., Albu T.V., Anderson A.B., Angus J.C.)
E-mail: bxs2@po.cwru.edu
http://www.cwru.edu

39. **International Technology Center**, Research Triangle Park
(Shenderova O.)
E-mail: oshenderova@itc-inc.org
http://www.itc-inc.org

40. **Lawrence Livermore National Laboratory**
(Galli G., Ree F., Glosli J., Winter N., Viecelli J., Bastea S., Wu C., Raty J.-Y., Bostedt C., van Buuren T.W., Terminello L.J.)
E-mail: galligygi1@llnl.gov
http//www-phys.llnl.gov

41. **Los-Alamos National Laboratory**
(Shaw M.S.)
http://www.lanl.gov

42. **Nanostructures and amorphous materials, Inc**, Los Alamos, New Mexico
(Huang J.-G.)
E-mail: nanoam@msn.com

43. **Naval Research Laboratory**
(Butler J., Daulton T.)
http://www.nrl.navy.mil

44. **North Carolina State University**, Raleigh
(Brenner D., Hren J., Zhirnov V., Kvit A., Jaeger D., Tyler T., Kang D., Bilbro G., Shenderova O., Areshkin D.)
http://www.ncsu.edu

45. **UK Abrasives Inc**, Northbrook, Illinois
(Slobodsky V.)
E-mail: vslobodsky@ukabrasives.com

Source Index

List of Journals

Acta Phys. Sin.-Ch. Ed. – Acta Physica Sinica (Publisher: Chinese Physical Soc.)

Adv. Mater. – Advanced Materials

Anal. Chem. – Analytical Chemistry

Angew. Chem. Int. – Angewandte Chemie: International Edition

Annu. Rev. Mater. Sci. – Annual Review of Materials Science

Appl. Phys. Lett. – Applied Physics Letters

Appl. Surf. Sci. – Applied Surface Science

Astron. Astrophys. – Astronomy and Astrophysics

Astronom. vestnik – Astronomicheskii vestnik (in Russian)

Astrophys. J. – Astrophysical Journal

Astrophys. Space Sci. – Astrophysical Space Science

Bioconjugate Chem. – Bioconjugate Chemistry

Bull. Phys. News. – Bulletin of Physics News

Bull. Soc. Chem. Fr. – Bulletin de la Societe Chomique de France

Ceram. Eng. Sci. Proc. – Ceramic Engineering and Science Proceedings (CESP)

Chem. Mater. – Chemistry of Materials

Chem. Phys. – Chemical Physics

Chem. Phys. Reports. – Chemical Physics Reports

Chin. J. High Pressure Phys. – Chinese Journal of High Pressure Physics

Chin. J. Mater. Res. – Chinese Journal of Material Research

Chin. Phys. Letters. – Chinese Physics Letters

Chin. Sci. Bull. – Chinese Science Bulletin

Colloid J. – Colloid Journal

Combust. Explos. Shock Waves. – Combustion Explosion and Shock Waves

Computer Modeling & Eng.Sci. – Computer Modeling & Engineering Science

Critic. Rev. Sol. State Mater. Sci. – Critical Reviews in Solid State and Materials Sciences

Cryst. Res. Technol. – Crystal Research and Technology

Diamond Films Technol. – Diamond Films and Technology

Diamond Relat. Mater. – Diamond and Related Materials

Diffus. Defect Data – Diffusion and Defect Data

Dokl. Akad. Nauk USSR – Doklady Akademii Nauk USSR (in Russian)

Electrochem. Soc. Proceed. – Electrochemical Society Proceedings

Eur. Phys. J. – European Physical Journal

Europ. Polymer J. – European Polymer Journal

Fiz. Goren. Vzryva – Fizika Gorenija i Vzryva (in Russian)

Geochim. Cosmochim. Acta – Geochimica et Cosmochimica Acta

High. Temp. Mater. P-Us. – High Temperature Material Processes

Inorg. Mater. -Engl. Tr. – Inorganic Materials (English translation of Neorganicheskie Materialy)

Int. J. Mod. Phys. B. – International Journal of Modern Physics B

Izv. Ross. Akad. Nauk. Khim. – Izvestiya Rossijskoi Akademii Nauk , Seriya Khimicheskaya

J. Amer. Ceram. Soc. – Journal of American Ceramic Society

J. Anal. Chem. – Journal of Analytical Chemistry

J. Appl. Phys. – Journal of Applied Physics

J. Astrophys. Space. Sci. – Astrophysics and Space Science

J. Balkan Tribological Association. – Journal of Balkan Tribological Association

J. Chem. Phys. – Journal of Chemical Physics

J. Chem. Soc. Faraday Trans. – Journal of the Chemical Society Faraday Transactions

Chem. Vap. Deposition. – Chemical Vapor Deposition

Comp. Aided Design. – Computer Aided Design:

J. Cryst. Growth. – Journal of Crystal Growth

J. Electrochem. Soc. – Journal of Electrochemical Society

J. Electron Microsc. – Journal of Electron Microscopy

J. Exper. Theor. Phys. – Journal of Experimental and Theoretical Physics

J. Mater. Chem. – Journal of Materials Chemistry

J. Mater. Res. – Journal of Materials Research

J. Mater. Sci. Letters. – Journal of Materials Science Letters

J. Metastable and Nanocrystalline Mat. – Journal of Metastable and Nanocrystalline Materials

J. Nanoscience and Nanotech. – Journal of Nanoscience and Nanotechnology

J. Non-Cryst. Solids. – Journal of Non-Crystalline Solids

J. Optoelectr.Adv. Mater. – Journal of Optoelectronics and Advanced Materials

J. Phys. Chem. – Journal of Physical Chemistry

J. Phys. Chem. Sol. – Journal of Physical Chemistry of Solids

J. Phys. D Appl. Phys. – Journal of Physics D-Applied Physics

J. Phys. Soc. Jpn. – Journal of the Physical Society of Japan

J. Vac. Sci. Tech. A. – Journal of Vacuum Science and Techology. A

J. Vac. Sci. Technol. B. – Journal of Vacuum Science and Techology. B

JETP Lett. – JETP Letters (Translation of Pis'ma v Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki)

Jour. Phys: Condens.Matter. – Journal of Physics. Condensed Matter

Jpn. J. Appl. Phys. – Japanese Journal of Applied Physics

Khim. Fiz. – Khimicheskaya Fizika (in Russian)

Mat. Res. Soc. Symp. Proc. – Materials Research Society Symposium Proceedings

Mater. Lett. – Materials Letters

Mater Res. – Materials Research

Mater. Sci. Eng. – Materials Science and Engineering

Mendeleev Communs. – Mendeleev Communications.

Meteorit. Planet. Sci. – Meteoritics & Planetary Science.

Mol. Cryst. Liquid Cryst. Sci. and Tech. – Molecular Crystals and Liquid Crystals Science and Technology

Mol. Mater. – Molecular Materials

Mol. Simulat. – Molecular Simulation

MRS Bulletin. – Materials Research Society Bulletin

Nanostruct. Mater. – Nanostructured Materials

New Diamond Front. Carbon Technol. – New Diamond and Frontier Carbon Technology

Nov. Prom. Tehnol. – Novosti Promishlennoi Tehnologii (in Russian)

Nucl. Instrum. Methods – Nuclear Instruments and Methods in Physics Research

Optich. Zhurnal. – Opticheskii Zhurnal (in Russian)

Particulate Sci. Tech. – Particulate Science and Technology

Phil. Mag. – Philosophical Magazine

Phil. Mag. Lett. – Philosophical Magazine Letters

Phys. Chem. Minerals. – Physics and Chemistry of Minerals

Phys. Chem. Chem. Phys. – Physical Chemistry Chemical Physics

Phys. Rev. B– Pysical Review B

Phys. Rev. Lett. – Pysical Review Letters

Phys. Scripta – Physica Scripta

Phys. Solid State – Physics Solid State (English translation of Physica Tverdogo Tela, in Russian)

Phys. Stat. Sol. B. – Physica Status Solidi Ser. B

Rep. Prog. Phys. – Reports on Progress in Physics

Rus. Chem. Rev. – Russian Chemical Reviews (English Translation)

Sol. State Electron. – Solid-State Electronics

Sol. State Phenom. – Solid State Phenomena

Spectrochim. Acta. A – Spectrochimica Acta A

SPIE. - Journal of the Society of Photo-optical Instrumentation Engineers

Surf. Coat. Technol. – Surface and Coatings Technology

Surf. Rev. Lett. – Surface Review Letters

Surf. Sci. – Surface Science

Tech. Phys. Lett. – Technical Physics Letters (English translation of Pisma v Zhurnal Tekhnicheskoi Physiki, in Russian)

Thin Sol. Films. –Thin Solid Films

Tribol. Trans. – Tribology Transactions

Usp. Khim. – Uspekhi Khimii (in Russian)

Z. Kristallogr. – Zeitschrift für Kristallographie

Zhyrnal Vses. Khim. Obschestva – Zhyrnal Vsesojuznogo Khimicheskogo Obschestva

Author Index

Abaev M.I. 219
Abe H. 515, 526, 528
Adachi H. 537
Adadurov G.A. 017
Adamchuk V.K. 219
Adriaenssens G.J. 181, 211, 271, 313
Adrianova T.N. 275
Afanas'ev V.V. 271
Affoune M. 283, 488
Ager III J.W. 381
Agibalova L.V. 274, 276
Ahmad S. 511
Ahn J. 325
Ajayan P.M. 545, 549, 553, 555
Akamatsu K. 533
Akimova L.N. 082
Albella J.M. 332
Albu T.V. 309
Aleksandrov M.M. 633, 637
Aleksandrov M.N. 174
Aleksenskii A.E. 180, 183, 205, 211, 219, 248, 271
Aleshaev A.N. 301
Alexandrou I. 519, 527
Alexenko A.E. 389
Alimova A.N. 284, 364, 406
Allamandola L.J. 598
Allen J.E. 602
Almlof J. 007
Amaratunga G.A.J. 391, 519, 527
An B. 500
Ananiyan A.V. 077
Anders A. 381
Anders E. 003, 005
Anders E.B. 600
Anders S. 381
Anderson A.B. 309
Anderson L.W. 375
Andersson O.E. 504
Ando T. 308
Andreev V.D. 019, 182,
Andreyev V.D. 187
Andrianova T.N. 366, 443
Angus J.C. 309
Anikeeva O.B. 232, 485
Anisichkin V.F. 054, 055, 069, 087, 088
Annis K. 509
Antipenko A.G. 020, 062
Antonyuk V.S. 446
Aoyagi Y. 110, 111, 210
Arakawa M. 573
Arden J.W. 596
Areshkin D. 135, 136, 140, 143
Arora A.K. 288
Asher S.A. 292
Asmussen J. 192
Auciello O. 331, 339, 346, 350, 353, 372, 455, 477, 478
Averin A.N. 482
Ayers M.R. 507
Babaev V.G. 168, 278, 389, 392, 505
Babina V.M. 168, 505
Babyshkin Y.A. 052
Bacsa W.S. 560
Badaev F.Z. 280
Badziag P. 157
Badzian A. 481
Baidakova M.V. 180, 181, 183, 184, 204, 205, 248
Baik E.-S. 568, 570
Baik Y.-J. 568, 570
Baldereschi A. 142, 502
Bandow S. 504
Banhart F. 113, 513, 520, 535, 542, 545, 549, 551, 552, 553, 554, 555
Baonza V.G. 291
Baraboshkin K.S. 450, 451
Baras C. 072, 303
Barborini E. 327
Barnard A.S. 137, 138, 144, 145, 146, 147, 226, 227, 562, 563, 564, 566
Bassett W.A. 004, 132
Bastea S. 049
Bates S. 606
Batrakov A.M. 301
Bazaly G.A. 089, 246
Bello I. 091, 355
Belobrov P.I. 228, 230, 236, 250, 284, 285, 364, 417, 421, 460, 461, 462, 475, 604
Belyavina N.N. 418
Ben-Chorin M. 396
Bennett A. 324
Ber B.Ya. 211
Bernatowicz T.J. 594
Besedina O.A. 279, 280
Bhattacharyya S. 350
Bhusari D.M. 242, 356
Bi B. 192
Bilbro G.L. 281
Birrell J. 331, 350
Biryukov A.V. 452
Bismayer U. 176
Blatter A. 405
Blaut-Bachev A.N. 235
Bochechka A.A. 193, 266, 412, 418, 420, 426
Bodrova V.S. 429, 434
Bogatyreva G.P. 089, 105, 106, 166, 190, 246, 249, 254, 255, 273, 467, 470
Bogy D.B. 381
Bondar' B.C. 462, 463
Bondar V.A. 464
Bondar V.S. 454, 456, 457, 458, 460, 461
Borimchuk N.I. 186
Bormett R.W. 292

Borodina L.M. 015
Bostedt C. 139
Bouilov L.L. 392
Bourgeois L.N. 178
Boustie M. 505
Bower C. 340
Braatz A. 583
Bradley J.P. 576
Bratilov B.I. 614
Brauneck U. 404
Bregadze A.Yu. 392, 389
Brenner D.W. 022, 135, 136, 140, 143, 565
Breskin A. 339
Breusov O.N. 010, 017
Briddon P.R. 245
Britun V.F. 428
Brown I.G. 381
Brownlee D.E. 576
Brylyakov P.M. 066, 085, 174, 261, 280, 407, 617, 623, 623, 624, 630, 633, 637
Buehler J. 396
Buerki P.R. 115
Bukaemskii A.A. 456, 460, 461, 462
Bulcock S. 250
Bulusheva L.G. 302, 523, 531
Bundy F.P. 132
Burian A. 512
Burkat G K. 401, 402, 403
Burkhard G. 107
Bursill L.A. 093, 149, 178, 188, 99, 212, 214, 216, 228, 230, 240, 250, 297
Buseck P.R. 594
Bushman A.V. 064
Busmann H.G. 353, 404, 478
Butenko Yu.V. 079, 133, 195, 200, 202, 232, 233, 302, 485, 522, 523, 531, 543, 544, 547, 548, 558
Butler J.E. 191, 318, 453, 455
Bychin N.V. 407
Bystrova N.A. 100
Cabioc'h T. 513, 516, 517, 521, 525
Cai W. 455
Cai Y. 296
Camelio S. 521
Canning A. 206, 259
Cao L.M. 094
Cao R. 306
Cao W. 507
Car R. 134, 206, 207, 208, 259
Carlisle J.A. 292, 305, 331, 350, 455
Carlson R.M.K. 090
Carroll J.J. 390
Carstanjen H.D. 551
Catellani A. 495
Chaikovskii E.F. 011
Chalo N.I. 450
Chang D.J. 440
Chang H.-C. 213, 215, 267, 296, 574, 578
Chang R.P.H. 338, 372, 379, 380, 477
Chang Y.H. 493
Chang Y.K. 242, 356
Charai A. 541
Chattopadhyay S. 318
Chawla S. 384
Cheburina L.A. 253
Chechen R. 339
Chen C.-F. 578
Chen G. 237, 348
Chen J. 196, 203, 357, 360, 361
Chen J.S. 348
Chen K.H. 242, 318, 344, 356
Chen L.C. 242, 318, 344,
Chen M. 328
Chen P.W. 289, 536
Chen Q. 286, 351, 395, 476, 536
Chen Y.T. 213
Cheng C.-L. 267, 335, 578
Cherian K.A. 572
Chernyh S.A. 407
Chernysheva I.S. 470
Chhowalla M. 519, 527
Chien F.Z. 242
Chiganov A.S. 167, 170, 268, 626
Chiganova G.A. 167, 170, 268, 269, 277, 316, 454, 626
Chiganova V.A. 052
Chiu H.T. 495
Chizhik S.A. 442
Chkhalo N.I. 451
Cho K. 234
Choi W.B. 378
Chow G.-M. 466
Christiansen S.H 342, 345
Chubun N.N. 284
Chukhaeva S.I. 253, 257, 423, 482, 612
Chuvilin A.L. 058, 079, 133, 174, 202, 232, 233, 241, 302, 485, 523, 543, 544, 547, 548, 558, 618
Cleri F. 256
Coffman F.L. 306
Cohen H. 396
Collins C.B. 390
Compton R.G. 319, 320
Comtet G. 342
Constant L. 541
Corrigan T. 372
Corrigan T.D. 338, 351, 379, 380, 477
Cota-Sanchez G. 114
Couris S. 471
Couvrat P. 365
Craighead H.G. 191
Csencsits R. 299, 305, 383, 445
Cuomo J.J. 378
Curtiss L.A. 141, 163, 164, 311, 312, 350, 367, 373
d'Hendecourt L.B. 592
Dahl J.E. 090
Dai D.Y. 094
Dai Z.R. 576
Danilenko N.V. 420, 425

Danilenko V.V. 061, 063, 065, 084, 106, 425
Danilov A.I. 615
Danishevskii A. 124
Daulton T.L. 112, 594, 639
Davanloo F. 390
Davydov V.Y. 205
De Laeter J.R. 580
DeHeer W.A. 560
Deki S. 533
Delmotte L. 303
Demchenko A.N. 443
Dementjev A.P. 228, 230, 247, 422
Dementjev P. 300
Denanot M.F. 517
Deng S.Z. 196, 203, 357, 360, 361
Dennis J.K. 282
Derendyaev B.G. 087
Detkov P.Ya. 098, 230, 252, 257, 284, 364, 405, 423, 454, 471, 482, 612
DeVita A. 206, 259
DeVries R.C. 481
d'Hendecourt L. 585
Dideikin A.T. 180, 248, 271
Diederich L. 285
Dikov I. 604
Dikov Yu.P. 590
Dimitrijevic S. 603
Ding J. 053
Ding M.Q. 339, 353, 378,
Ding Y.S. 536
Dluzewski E. 419
Dobos L. 095
Dolgushev N.V. 151
Dolgushin D.S. 054
Dolmatov V.Yu. 023, 024, 031, 074, 251, 272, 274, 276, 401, 402, 403, 411, 415, 424, 429, 431, 434, 438, 459, 479, 632, 633, 636, 637
Dong C. 232, 485, 531
Donnet J.-B. 026, 072, 076, 103, 303, 546
Dore J.C. 512
Dorschner J. 595
Dorzhpalamyn P. 172
Dravid V.P. 503, 506
Dremin A.N. 077
Drobishev V.N. 010, 014, 017
Dryomin A.N. 020, 062, 086
Dub S.N. 418
Dubitsky G.A. 075, 315
Dubravin A.M. 442
Ducati C. 327
Duda T.M. 165, 310, 414
Dujardin G. 342
Eckhardt A. 026, 076, 103, 303, 546
Eda H. 444
Edrei R. 342
Efimov O.A. 613
Egawa S. 264, 265
Ehret G. 541
Eisenhour D.D. 594
Ekimov A.G. 419
Ekimov E.A. 409
Eklund P.C. 201, 489
Ekstrom T.C. 417
Elin V.I. 063, 084,
Elin V.N. 065
Eliyahu A. 396
Elliot B.R. 503, 506
Ellis W.P. 157
Endo M. 201, 486, 496, 514
Enoki T. 201, 283, 486, 488, 489, 490, 491, 494, 496, 499, 504
Erdemir A. 353, 445
Ershov A.P. 008, 009, 070, 287
Ersoy D.A. 125, 126, 353
Eryomenko N.K. 613
Evans W.J. 291
Ewels C.P. 245
Falaleev O.V. 236
Faleev N.N. 184
Fan S. 571
Fang L. 343
Farcasiu M. 640
Fedorchenko M.F. 450
Fedorchenko M.V. 451
Fedorov V.B. 030
Fedotov M.G. 301
Feeney S.S. 466
Fehlhaber R.P. 212, 216, 240, 297
Feng L.X. 469
Feng Y.T. 357
Feng Z. 381
Fenske G.R. 445
Feygelson T. 191, 318
Fijishima A. 567
Filatov L.I. 058, 059, 098, 482, 612
Filippova E.V. 615
Fink J. 525
Finskaya V.M. 427
Fisenko A.V. 577, 584, 591, 593
Fomina L.V. 317
Foord J.S. 319, 320, 324
Fortov V.E. 064, 505
Foster C.M. 388
Fousson E. 072, 103, 303
Frankland S.J. 140
Frauenheim T. 141, 158, 311
Frenklach M. 116, 117, 118, 119, 120, 121, 122, 627
Frolov V.D. 177, 369, 422, 474, 475
Fugaciu F. 539
Fujii M. 512, 518, 529, 530, 532, 533, 537, 538, 540, 547, 548
Fujimura T. 024, 272, 401, 411
Fujita M. 501
Fukuda H. 295
Fukuyama S. 500
Fullerton A.L. 178
Galimov E.M. 590

Galli G. 048, 060, 134, 139, 142, 206, 207, 208, 259, 260, 495, 502, 508, 510
Gamanovich D.N. 073
Gamarnik M.Y. 156
Gao C.X. 094
Gao X. 333
Gardos M.N. 353, 478
Gargin V.G. 266, 418, 420
Garrell R.L. 466
Gavriliuk B. 419
Gavrilova V.S. 193, 255
Gelman A. 466
Genge M.J. 576
Gerbi J. 455
Gibson J.M. 331
Gierlotka P. 419
Gierlotka S. 176, 409
Girard J.C. 521
Givargizov E. 235, 339
Gleiter H. 256
Glinka Yu.D. 213, 215
Glosli J.N. 047, 048, 049, 129, 130, 131
Gnaser H. 380
Goeting C.H. 319
Gogotsi Y. 123, 125, 126, 127
Göhl A. 235, 406
Goldade A.V. 442
Golden M.S. 525
Golding B. 192
Golshani F. 433
Golubev V.G. 393
Golubeva E.S. 081
Goncharov A.F. 132
Gong W. 237
Gontar A.G. 266
Gordeev S.K. 124, 220, 236, 369, 408, 416, 417, 421, 422, 430, 435, 437, 452, 465, 475, 604
Gordillo-Vazquez F.J. 332
Gorelik V.S. 217, 225, 293,
Gorjacheva L. 472
Gorschkov A. 472
Gorshkov A.S. 443
Goryacheva L.V. 443
Gouzman I. 342, 359
Goyette A.N. 350
Goyette N. 375
Grady M.M. 596
Graupner R. 238
Grechinskaya A. 124
Grehan K.J. 319, 320
Greiner N.R. 071,
Grieco W.J. 534
Grobet P.J. 181
Gromnitskaya E.L. 409
Gromov M.D. 582
Groning O. 364
Grudinkin S.A. 393
Gruen D.M. 025, 141, 163, 164, 292, 299, 305, 311, 312, 331, 338, 339, 346, 350, 351, 352, 353, 367, 368, 372, 373, 374, 375, 376, 377, 379, 380, 383, 385, 387, 388, 404, 445, 455, 477, 478, 610
Grzanka E. 176
Gubareva N.A. 013
Gubarevich T.M. 073, 172, 251, 317, 438, 483, 617, 623, 624, 628, 632, 635, 636, 637, 638
Gubarevich V.D. 085, 280, 407,
Gubin S.A. 067, 082
Guerin D. 397
Guerin P. 517, 521
Günther B. 235
Guo W.T. 328, 333
Gupta S. 322, 329
Guschin V.A. 619
Guseva M.B. 168, 278, 389, 392, 505
Gutakovskii A.K. 133, 544
Guzmann I. 158
Gvyazdovskaya V.L. 089, 106, 246, 254, 255, 467
Gygi F. 260, 510
Habermann T. 406
Haerle R. 142, 502
Haggerty S.E. 586
Hahn J.H. 161, 162
Halicioglu T. 155
Hamada H. 444
Hamers R.J. 453, 455
Han P. 433
Han W. 571
Harigaya K. 491, 492
Hatta A. 398, 399
Hayashi S. 512, 518, 529, 530, 532, 533, 537, 538, 540, 547, 548
He D. 237
He D.Y. 333
He M. 094
Heera V. 095
Heggie M.I. 245, 302, 523, 531
Heiman A. 330, 342, 345
Hellner L. 342
Hemley R.J. 132
Henning T. 583, 588, 589, 595
Henrard L. 521, 550
Herbst T.M. 598
Hermann H. 539
Hess P. 318
Heymann D. 581
Hian L.C. 319, 320
Hida A. 110, 111
Hikita M. 532, 533
Hill H.G.M. 576, 592
Himpsel F. 305
Hirai H. 108
Hiraki A. 336, 394, 398, 399
Hiramatsu M. 324
Hiraoka H. 514
Hishiyama Y. 201, 488, 489, 504

Hnatyszyn H.J. 466
Hoffman A. 158, 330, 342, 345, 359
Hondoh T. 573
Hong C. 390
Hong S.P. 337
Horner D.A. 163, 164, 367
Host J.J. 503, 506
Houston B.H. 191
Howard J.B. 534
Howard W. 116, 117, 120, 121
Hren J.J. 143, 378, 468
Hrienko A.F. 118
Hsieh H.H. 242, 356
Hu Ch.-G. 343
Hu J.Q. 334
Huang D. 116, 117, 120, 121, 122
Huang F. 053
Huang F.L. 286, 289, 536
Huang J.-H. 341
Huang W.-S. 192
Huang Y. 339
Huczko A. 114
Huggins K.E. 433
Hunt A.J. 507
Huss G.R. 580, 597
Hvostov V.V. 278
Hwang J.H. 503, 506
Hwang N.M. 161, 162
Iakoubovskii K. 181, 211, 313
Iarlori S. 260, 508, 510
Ide T. 370
Idrisov I.G. 279
Igami M. 501
Ignatchenko A.V. 279, 623
Igo A.V. 217, 225, 293
Iimura K. 519
Ikeda Y. 265
Ilnitskaya G.D. 166, 254
Inagaki M. 034
Ishchenko E.V. 246, 470
Ishida H. 224, 294, 295
Ishitani A. 224, 294, 295
Ismat Shah S. 397
Ito T. 398, 399
Ivanov A.V. 590
Ivanov Yu.N. 154
Ivanov V. 642
Jaeger C. 595, 583
Jakovleva E. 472
Jamieson D.N. 092, 093, 149, 214, 290
Jaouen M. 513, 516, 517, 521
Jardin C. 124
Jayatissa A. 353, 478
Jeon D. 568, 570
Jeon J.-D. 127
Jeschke G. 583
Ji S. 218, 221
Jiang K. 221
Jiang N. 336, 398
Jiang Q. 150, 197
Jiang T. 218, 223
Jiao S. 346
Jiazheng Z. 298
Jimbo T. 321
Jimenez I. 305
Jin S. 340, 371, 607, 609
Johnson D.L. 506
Johnson J.D. 002, 071
Jones A.P. 585, 592
Joswiak D.J. 576
Jun S. 053
Kaburagi H. 504
Kaburagi Y. 201, 488, 489
Kaito C. 573
Kalashnikov E.G. 030
Kalinkin A.V. 154
Kamo M. 308
Kamyshenko V. 126
Kaneko K. 490
Kang D. 468
Kang X. 298
Kapoor S. 306
Karabutov A.V. 177, 339, 369, 421, 422, 474
Karabutov V. 475
Kardanov A.A. 593
Katagiri G. 224, 294, 295
Kaufman P. 640
Kawamura K. 012
Kawatsu N. 490, 491
Keblinski P. 256
Keller N. 522
Kelly M. 306
Kematick R. 116, 121, 122
Kempiński W. 248
Khairulin R.A. 133, 202, 544
Khanin V.V. 358
Khripkova L.D. 414
Khvostov V.V. 389, 392, 505
Kichambare P D. 344
Kimoto K. 229, 349
Kimura Y. 573
Kireitseu M. 413
Kirk M.A. 112, 346, 639
Kiselev N.I. 417
Kitahara H. 608, 620
Kluev A. 419
Klyubin V.V. 274, 276
Knickerbocker T. 453, 455
Knowles K.M. 391
Knupfer M. 525
Koba R. 116, 117, 120, 121, 122, 627
Kobori R. 490
Kochanski G.P. 340, 371, 607, 609
Koga K. 185
Koga Y. 337
Koguchi Y. 110, 111
Kohler T. 158
Kokkinaki O. 471
Kolchemanov N.A. 252
Kolomiichuk V.N. 079, 174, 202, 080
Komarov V.F. 027, 045, 046, 085, 171, 173, 407, 448, 449, 450, 451, 480, 608, 620, 625, 633

Komatsu S. 229, 349
Kompan M.E. 220
Komvopoulos K. 381
Kondo K. 108
Kononenko T.V. 400
Konov V.I. 177, 339,369, 386, 422, 474, 475, 548
Konstantaki M. 471
Koptyug V.A. 087
Koretz A. 209
Korobov D.Yu. 631
Korobov Yu.A. 613, 631
Korotkevich S.V. 442
Korovin S. 471
Korzhenevskii A.P. 073
Koscheev A.P. 582
Kossovsky N. 466
Kostrova L.N. 459
Kostyukov S.I. 450, 451
Kostyukova N.M. 317, 628, 635, 637, 638
Kouchi A. 573
Koudoumas E. 471
Kovalev N.F. 429
Kovrigin S.A. 605
Kozharskij S.P. 625
Kozubowski J.A. 409
Kozyrev N.V. 027, 068, 081, 608, 620
Kozyrev S.V. 148
Kramskoj Yu.I. 482
Krauss A.R. 292, 299, 305, 338, 346, 351, 368, 372, 374, 375, 376, 377, 379, 380, 383, 385, 387, 388, 445, 477, 478
Krauss R. 339, 350, 353
Kronmuller H. 551
Kruger A. 393
Kruglyakov E.P. 450, 451
Kryukov N.A. 219
Kudryavtsev Y.P. 100
Kuettel O.M. 285
Kukino S. 108
Kulakova I.I. 028, 096, 172, 251, 262, 382
Kulipanov G.N. 301
Kuo S.-J. 296
Kupershtokh A.L. 008, 287
Kurdyumov A.V. 010, 186, 428
Kurokawa Y. 210
Kuropatkin V.G. 436
Kusakabe K. 264, 265
Kuttel O.M. 364
Kuzmenko E.F 310
Kuznetsov V.L. 079, 133, 174, 195, 200, 202, 222, 232, 233, 241, 302, 471, 485, 522, 523, 531, 543, 544, 547, 548, 558, 618
Kvit A.V. 468
Kyutt R. 124
Ladner E. 640
Lai J.Y. 335
Lai P.F. 199
Lakin E. 330
Lambin P. 521, 550
Lange H. 114
Lapovok V.N. 038
Larionova I.S. 454,628, 632, 635, 636, 637, 638
Lasseter T.L. 455
Lau C.H. 324
Lau S.P. 348, 362
Lawler J.E. 375
Lazanov S. 642
Lebedev B.V. 104
leBolloch D. 512
Lee C.S. 091, 355, 493
Lee I.P. 574
Lee M.R. 591, 596
Lee S.T. 091, 158, 355
Lee S.W. 570
Lee Y.T. 296, 574
Lei Q.S. 333
Lemoigne C. 026, 076
LeMoigne C. 546
Lenormand F. 541
Leshev D.V. 148
Letunovsky V. 443, 472
Leutwyler S. 115
Levintova E.A. 438
Lewis R.S. 003, 005, 112, 580, 594, 597, 639
Ley L. 238
Leypunskiy O.I. 021
Li J.C. 150
Li J.Q. 328, 333, 091, 571
Li S. 218
Li Y.C. 094
Li Y.J. 093, 348
Liang J. 097
Liao K.-J. 343
Liao M.Y. 334
Lifshitz Y. 091, 158
Likholobov V.A. 174
Lin E. 102, 159, 061, 075, 104, 270, 315, 436
Lin I-N. 341
Lin K.W. 213, 215
Lin R.-W. 267
Lin S.H. 213, 215
Lin S.T. 242, 344
Lipp M.J. 291
Litster J. 572
Litvinov B.V. 058, 482
Liu C.S. 493
Liu J. 441
Liu S. 387, 388
Liu S.G. 090
Ljachov N.Z. 301
Lojkowski W. 409
Lopez J.M. 332
Lorenzana H.E. 291
Loss R.D. 580
Loubnin E.N. 222, 386, 400, 405, 548
Loutfy R. 603
Lucas A.A. 550

Luckjanchikov L.A. 301
Lugmair G.W. 580
Luo J. 388
Luthi H.P. 007
Lyamkin A.I. 009, 013, 029, 052, 070, 619
Lyutovich Y. 113, 535, 545, 551
Maas R. 580
Maeda H. 264
Maeda K. 110, 111
Maegawa M. 224, 294
Maevsky V.M. 231
Maillard-Schaller E. 285, 364
Makarskaya G.V. 454
Makeev A.V. 452
Makita H. 398, 399
Maksimova N.I. 522
Mal'kov I.Y. 058, 059, 079, 080, 088, 133, 189, 558, 618
Mal'kov Y.F. 069
Mal'kov Yu.I. 078, 083, 087
Malogolovets V.G. 254, 255
Malyshev A.N. 104
Mamezaki O. 537
Mancini D.C. 353, 478
Mandich N.V. 282
Mao H.K. 132
Marinich M.A. 089, 246, 249, 255, 467, 470
Marken F. 319, 320
Markov L. 642
Marks N.A. 138
Martin R.M. 134, 207, 208
Martinez-Miranda L.J. 198, 363
Martini O. 508
Martonik M.V. 616, 621
Marty O. 124
Maruyama S. 490
Maslakov K.I. 228, 230, 247
Mason T.O. 506
Mastikhin V.M. 307
Masuda H. 567
Matsuki M. 295
Matsumoto S. 229, 349
Mazanov V.A. 061, 075, 315
McCallum J.C. 092, 093, 149
McCauley T.G. 368, 372, 374, 375, 377, 379, 380, 445
McCulloch D.G. 297
McNallan M.J. 123, 125, 126, 127
McNamara Rutledge K.M. 384
Meaudre R. 124
Medvedkin V.A. 436
Meguro T. 110, 111
Melekhin V.G. 211
Mel'nikov V.A. 010
Meng F.Y. 091
Meng X.M. 334
Mescheryakova A.L. 406
Messmer R.P. 384
Mestl G. 522
Metev S.M. 386
Meyer E.M. 353, 478
Meykens K. 313
Migin A.N. 605
Mikhalovsky S.V. 473
Mikov S.N. 217, 225, 293
Milani P. 327
Miller J. 641
Ming T. 005
Mironov E. 209
Mishnev S.I. 301
Misra D.S. 288
Mitura A. 365
Mitura S. 365
Miyashita A. 515, 526
Miyashita K. 323
Mizuno S. 501
Mochizuki K. 601
Mohapatra R.K. 582
Moldovan N. 353, 478
Molokeev V.A. 051
Mordkovich V.Z. 514
Morell G. 322, 329
Mori Y. 224, 294, 370
Morohov I.D. 038
Morooka S. 264, 265
Moroz E.M. 079, 174
Mozdor E.V. 231
Mueller G. 406
Müller G. 235
Mutschke H. 595
Myers A.F. 378
Nachal'naya T.A. 019
Nadeeva F.I. 611
Nagai N. 295
Nakano H. 573
Naletov A.M. 409
Naletov M. 419
Naramoto H. 323, 393
Narayan J. 378
Narumi K. 323
Nau D. 406
Nesladek M. 313
Nesterenko T.M. 414
Neuefeind J. 176
Nevstruev G.F. 166
Ni Y. 232, 485, 531
Niedzielski P. 365
Nikitin E.V. 615
Nikitin Yu.I. 414, 435, 437
Nikolaev Yu.A. 220
Nishimura K. 336, 398
Nishio K. 567
Nomura S. 210
Nomura Y. 012
Novikov N.V. 249
Novikov S.A. 104, 436
Novosyolov V.V. 261
Nozhkina A.V. 252
Nugent K.W. 093, 214, 290
Nuth J.A. 001
Nuth J.A. III. 006, 602
Obata H. 224
Obraztsov A.M. 168
Obraztsov A.N 304, 241, 389, 392

Obraztsova E.D. 222, 386, 547, 548
Obraztsova I.I. 613
Odintsov V.V. 067, 082
Ogorodnik V.V. 634
Ohno H. 573
Ohta H. 529
Okada K. 169, 229, 349, 439, 432
Okino F. 486
Okotrub A.V. 232, 233, 302, 485, 523, 531
Oku T. 524
Okushi X. 304
Oleinik G.S. 418, 420, 425
Oleinik N.A. 089, 190
Orlova E.A. 401
Orwa J.O. 092, 093, 149, 214
Osawa E. 248
Oshida K. 201
Osipov V.Yu. 211, 219, 248.,271, 313
Ostrovidova G.U. 452
Ostrovskaya N.F. 186
Ott U. 582, 583, 595, 599
Ouyang Q. 169, 432, 439
Ovcharenko A.G. 617, 623, 623, 623, 624
Overmyer D.L. 363
Ownby P.D. 441
Ozawa M. 248
Ozima M 601
Padalko V.I. 231, 249, 473
Pageler A. 404
Pal A.F. 143
Palosz B. 176, 409
Palosz S. 419
Palosz W. 176
Pan X. 385, 387, 388
Panich A.M. 248
Park S. 234
Parpia J.M. 191
Parrinello M. 134, 207, 208, 260, 510
Patel B.A. 473
Patrusheva T. 472
Pavlovskaya M.A. 104
Pavlovsky I.Yu. 241, 304
Pavtsova Y.A. 205
Pecz B. 095
Pedraza D.F. 509
Peng C.-M. 026, 076
Peng C.W. 493
Peng H.Y. 355
Peng J.L. 093, 149, 188, 214, 250, 297
Peng W.-P. 296
Pepekin V.I. 067, 082
Pereverzev V.G. 222
Perron C. 592
Pershin S.V. 056, 062, 077, 086
Petrakovskaya E.A. 236, 417
Petrov E.A. 027, 070, 013, 045, 046, 054, 056, 066, 171, 173, 209, 450, 451, 608, 614, 620, 625
Petrov Y.I. 037
Petrova L.A. 261
Petrusha I.A. 425
Phelps A.W. 116, 120, 122
Philip J. 318
Philips D.S. 071
Phillpot S.R. 256
Pianetta P.A. 306
Pichler T. 525
Piekarczyk W. 160
Pielaszek R. 176
Pillinger C.T. 577, 584, 591, 596
Pimenov S.M. 177, 222, 339, 386, 400, 405, 471, 548
Piseri P. 327
Pleskach L.I. 628
Poltoratsikij V.G. 435, 437, 414
Pong W.F. 242, 356
Pontier Johnson M. 072, 103
Popovici G. 433
Postnov V.N. 074, 424
Potapov M.G. 625

Prasad B.L.V. 201, 283, 488, 489, 494, 499, 504
Prawer S. 092, 093, 149, 188, 199, 214, 290
Prelas M.A. 433
Presz A. 419
Prihod'ko E.E. 630
Primacheva L.G. 621
Prior Y. 396
Proffen T. 176
Provencio P.N. 363
Provencio P.P. 198
Purtov K.V. 456, 457
Pustovoi V. 471
Putnis A. 391
Puzyr' A.P. 454, 456, 457, 458, 460, 461, 462, 463, 464
Pyaterikov V.F. 632, 633, 636
Pyaternev S.V. 086
Qian Y.-Z. 587
Qin L.C. 368, 372, 373, 374, 376, 380
Qiu D.J. 326
Rahel' A.D. 064
Rainey L.C. 534
Raj R. 194
Rajguru S. 466
Rakhimov A. 339
Rakhimov T. 354, 358
Ralchenko V.G. 369, 386, 400, 421, 422, 475
Ramsh A.S. 429
Rao A.M. 201, 489
Rao C.N.R. 243, 244
Rao T.N. 567
Raty J.-Y. 139
Ravindran T.R. 288
Reddy G.L.N. 288
Redfern P.C. 163, 367, 373
Red'kin V.E. 616, 621, 622, 629
Redlich P. 545, 549

Ree F.H. 048, 049, 050, 129, 130, 131, 152, 153
Rehn L.E. 112, 639
Rellick G.S. 440
Richter V. 359
Rigolli P. 495
Ristein J. 238
Riviere J.P. 521
Robertson J. 327
Roddatis V.V. 195, 200, 522
Rogacheva A.I. 017
Rogov V.V. 418
Romain J.P. 505
Romanenko A.I. 232, 233, 485, 531
Romanko L.A. 193, 266, 418
Romanov E. 498
Romeo M. 541
Rosman K.J.R. 580
Rotter S. 359
Roy R. 481
Rozenberg G.Kh. 011
Ruan M.L. 109
Rudenko A.P. 028, 096, 172, 251, 382
Rudina N.A. 241
Rudolph V. 572
Ruoff R.S. 565
Russell J.N. 453, 455
Russo S.P. 137, 138, 144, 145, 146, 147, 226, 227, 562, 563, 564, 566
Rutt K.J. 473
Ryzhko G.A. 628, 635
Saburbaev V.Yu. 402
Safonov Yu.N. 613
Saha D.K. 185
Saikaly W. 541
Saito T. 265
Sakovich G.V 027, 045, 046, 066, 068, 070, 085, 171, 173, 179, 280, 608, 620, 625, 633
Sakurai T. 529
Salahutdinov N.F. 087
Salama F. 588
Salko A.E. 402
Samirant M. 026, 072, 076, 103, 303, 546
Samylov S.V. 482
Sandford S.A. 598
Sano N. 519, 527
Sataev P.P. 617, 623, 623, 624, 628, 632, 633, 635, 636, 637, 638
Sataeva R.R. 317
Sato H. 201, 283, 486, 488, 489, 490, 496, 499, 504
Sato Y. 308
Savvakin G.I. 015, 118
Sawaoka A.B. 099, 107, 057
Schall J.D. 140
Schewe P.F. 044
Schlapbach L. 285, 364
Schlogl R. 195, 200, 522
Schlueter J. 350
Schnaiter M. 589
Schur M. 522
Schwager F. 405
Schwartz M.P. 453
Segall B. 202, 543
Seifert G. 539
Sekaric L. 191
Seleznev B. 235
Sellgren K. 579
Semjonova L.F. 577, 584, 591, 593
Sen C.S. 068
Sen R. 243, 244
Senyut' V.T. 263, 427
Sepold G. 386
Sergeev S.S. 067
Sergienko V. 443, 472
Serova T.V. 061
Shaichutdinov Sh.K. 079
Shaklina I.V. 148
Shalyuta V.N. 625
Shames A.I. 248
Shamraeva V.S. 089, 273, 414
Shangin A.P. 622
Shao L. 237
Sharda T. 321
Sharma A.K. 378
Shaw M.S. 002
She J.C. 361
Shefer E. 339
Shein N.V. 261
Sheinerman A.G. 498
Shelohneva L.F. 429, 434
Shenderova O.A. 022, 135, 136, 140, 143, 565
Sheromov M.A. 301
Sheu S.Y. 574, 578
Shevchenko V. 126
Shi C.R. 326
Shi J.R. 362
Shibayama Y. 490, 496, 499
Shintani Y. 336
Shiratori Y. 514
Shitenkov N.V. 633
Shtejn M.S. 068
Shuh D.K. 305
Shul'man L.A. 019
Shulzhenko A.A. 266, 418, 420
Sickafus K.E. 526
Sidorin Yu.Yu. 613
Siegal M.P. 198, 363
Sigrist M. 497
Sikder A.K. 288
Siklitsky V.I. 180, 183, 184, 204, 248
Silva S.R.P. 391
Silzars A. 358
Simpson R.L. 363
Sinor T.W. 390
Sirenko A.V. 075, 315
Skorohod V.V. 118
Skorupa W. 095
Skryabin Yu.A. 615
Skvortsova V.L. 028
Slavinsky Yu.S. 249

Slyusarev S.Ya. 615
Smagina G.F. 279
Smekhnov A.A. 314
Smirnov A.B. 211
Smith L.M. 453, 455
Smolianinov A. 604
Smolin A.A. 369, 386, 400
Smorgonskaya E. 124
Snook I.K. 137, 138, 144, 145, 146, 147, 226, 227, 562, 563, 564, 566
Soga T. 321
Sokolov Yu.P. 411
Sokovich G.V. 174
Soldatov E.S. 358
Solohina A.B. 279, 623
Solonin Y.M. 118
Song X.-Y. 507
Sosa S.S. 347
Soucy G. 114
Sozin Yu.I. 182, 187, 190
Spear K.E. 116, 117, 120, 121, 122, 627
Speisser C. 541
Spitsyn B. 235, 262
Srivastava D. 234
Standifird J.D. 390
Stankus S.V. 133, 202, 544
Starchenko I.M. 427
Staver A.M. 009, 013, 029, 070, 616, 619, 621, 622, 626, 629
Stavrev S. 642
Steel E. 003, 005
Stein B. 044
Stel'makh S. 176
Stepanova A. 235
Stepanova N.V. 630
Sternberg M. 141, 311
Stesmans A. 181
Stoev K. 642
Strother T. 453
Strunk H.P. 342
Su D.S. 195, 200
Suetin N. 235, 339, 358
Suganuma K. 524
Sugimoto K. 336
Suharenko V.I. 061, 075, 104, 315, 436
Sumant A. 346, 350, 353, 478
Sumathy R. 243, 244
Sun H.P. 094
Sun L.L. 094
Sun X.S. 355
Sun Y.N. 333
Sun Z. 348, 362
Suschev V.G. 633
Sutherland D.G.J. 305
Suvorov S.A. 151
Suwev V.T. 637
Suzuki M. 110, 111
Svetlov S.A. 614
Swain G.M. 351
Swaoka A.B. 101
Swiderska-Sroda A. 409
Szmidt J. 239
Takagi H. 264
Takai H. 110, 111
Takai K. 486
Takamatsu Y. 308
Takemori T. 210
Takeo H. 185
Takeuchi Y. 514
Tallant D.R. 363
Tamura H. 107
Tanabe Y. 101, 107
Tananaev I.V. 030
Tang M. 003
Tao X. 298
Tarasevich B.N. 172
Tarasevich M.P. 470
Tarskikh S.V. 454
Tatianin Yu. 419
Tatsii V.F. 010, 017, 593
Tay B.K. 348, 362
Taylor K.N. 390
Ten K.A. 301
Teng M.H. 503, 506
Teo K.B.K. 519
Terminello L.J. 139, 292, 305, 306
Terukov E.I. 220
Teslenko A.S. 058
Tesner P.A. 015
Thune E. 513, 516, 517, 521
Tian J. 328
Tielens A.G.G.M. 575, 598
Timofeyev M.A. 168, 358
Titarenko Y.I. 051
Titov V.M. 058, 059, 069, 070, 087, 088, 189, 301, 558, 618
Tkach V.N. 266, 310
Tkachenko A.P. 257
Tolochko A.P. 061
Tolochko B.P. 301
Tomanek D. 484
Tomita S. 512, 518, 529, 530, 532, 533, 537, 538, 540
Tomita Y. 444
Tong W. 305
Torbati S. 466
Toropov A.D. 257, 423
Tosatti E. 260, 510
Touhara H. 486
Toyota H. 370
Trefilov V.I. 015, 118
Trifonov A.S. 358
Trusov L.I. 038
Tsai M.-H. 242
Tsaplin D.N. 056, 062, 077, 086
Tseng P.K. 242
Tsubota T. 264
Tsukuda Y. 530
Tsypkina I.M. 410
Tucek J. 353, 478
Turitsyna O.F. 628
Tushko Yu.M. 626
Tushko Yu.V. 154
Tushkov Yu.V. 170

Tyler T. 468
Tysheckaya A.B. 483
Ugarte D. 556, 557, 559, 560, 561
Urabe K. 264
Uvarov S.V. 605
Vacik J. 323
Valliulova Z.Kh. 168, 278, 389, 392
van Buuren T.W. 139
Van Kerckhoven C. 575
Vander Sande J.B. 534
Vasilishin M.S. 614
Vatanabe X. 304
Verchovsky A.B. 577, 584, 591
Vereshchagin A.L. 032, 085, 128, 171, 173, 175, 179, 261, 307, 407, 608, 620
Veretennikova M.V. 272, 402, 415
Verwoerd W.S. 157
Viccelli A. 047
Viecelli J.A. 049, 050, 129
Villafranca Otero A.L. 392
Vishnevskij E.N. 633
Vlasov A.V. 421
Vlasov I. 369, 421, 422
Vogel P. 587
Volk F. 071
Volkogon V.M. 447
Volkov A.P. 241
Volkov K.V. 063, 065, 084
Volokhov A.I. 450, 451
Voloshin M.M. 254
Voloshin M.N. 105, 249, 255, 273
Von Dreele R. 176
Vorobyev V.S. 064
Voznyakovskii A.P. 272, 274, 276, 415, 410, 411, 429, 431, 434, 438
Vul' A.Ya. 180, 181, 183, 184, 204, 205, 211, 219, 271, 313, 393
Vul' S.P. 180, 219
Vyskubenko B.A. 061
Wacker J.F. 005
Wacker J.G. 003
Waelkens C. 575
Wakabayashi K. 487, 497
Wang B. 432
Wang E.G. 360
Wang H. 519, 527
Wang L. 469
Wang N. 355
Wang Q. 325
Wang S.G. 325
Wang T.K. 026, 072, 076, 103, 303, 546
Wang T.Y. 242, 356
Wang W.K. 094
Wang W.-L. 343
Wang Z. 381
Wang Z.G. 334
Wang Z.X. 109
Wanke H. 590
Wasserburg G.J. 587
Watkins G.D. 384
Weathers M.S. 004, 132
Weber H.P. 176
Wei B. 097
Weiner B.R. 322, 329
Welz S. 123, 125, 126
Wesolowski P. 551
White E.T. 572
Wilde G. 150
Winter N.W. 129, 152, 153
Witck M. 351
Withers J. 603
Withrow S.P. 093, 509
Wlotzka F. 590
Wolf D. 256
Wong M.S. 335
Wouters B.H. 181
Wright I.P. 591
Wu C.-C. 578
Wu C.J. 048
Wu D. 097
Wu H.Z. 326
Wu J.-J. 344
Wu K.H. 360
Xabibullin I.G. 611
Xie E. 237
Xu H.J. 109
Xu K. 223, 237
Xu N.S. 196, 203, 357, 360, 361
Xu T. 221, 258, 328
Xu Y. 323
Xub K. 218
Xue L.A. 194
Xue Q. 258
Xue Q.J. 328
Yagi H. 370
Yagi I. 567
Yakushev V.V. 020
Yamada K. 057, 099, 101, 107
Yamaguchi S. 016
Yamamoto K. 308, 532, 538, 540
Yamamoto S. 323, 515, 526
Yamamoto Y. 110, 111, 444
Yanagishita T. 567
Yang D.J. 325
Yang J.R. 242, 344, 356
Yang S.R. 328
Yang T.S. 335
Yang W. 455
Yara T. 399
Yarosh V.V. 186
Yashchenko N.K. 634
Yasuda H. 533
Yasui K. 567
Yen M.Y. 493
Yokogawa K. 500
Yoon D. 161, 162
Yoon S.F. 325
Yoshida N. 486
Yoshikawa H. 337
Yoshikawa M. 224, 294, 295, 504
Yoshimura M. 500
Yu G.Q. 109
Yu L.P. 109

Yu Y.-C. 341
Yu Z.X. 203
Yuan J. 116, 117, 120
Yuan Y.L. 469
Yun S. 476
Yun S.R. 286, 289, 395, 536
Yur'ev G.S. 175
Yusa H. 569
Zabusov O.O. 247
Zadorozhnaya L. 235
Zagoruiko I.V. 174
Zaiser M. 535, 552
Zakharov A.A. 275, 366, 443, 619, 629
Zakharov D.N. 421
Zaldivar R.J. 440
Zalyaliev M.M. 611
Zapol P. 141, 311, 312, 338, 350, 367
Zelyavskii V.B. 186
Zhai H.Z. 395
Zhang C.L. 571
Zhang J. 094, 097
Zhang J.H. 333
Zhang M. 094
Zhang Q. 325
Zhang R.Q. 158
Zhang W.J. 355
Zhang X.Y. 094
Zhang Z. 094
Zhao D.S. 197
Zhao J. 258
Zhao M. 197
Zhirkevich V.Yu. 074, 424
Zhirnov V.V. 022, 143, 284, 285, 339, 364, 406, 468
Zhogova K.B. 104
Zhou D. 368, 372, 374, 375, 376, 379, 380
Zhou G. 053
Zhou Q. 325
Zhou X. 384
Zhou X.T. 091, 158, 334
Zhu D.Z. 109
Zhu F.Y. 109
Zhu H.S. 395
Zhu W. 340, 371, 607, 609
Zhu X. 323
Zhuk A.Z. 505
Zhukov S.G. 220, 422, 435, 437, 604
Zhutaeva G.V. 470
Zilberberg I.L. 543
Zinner E. 600
Zolotoyabko E. 330
Zolotuhina I.I. 407
Zou G.T. 094
Zubkov P.I. 301
Zuiker C.D. 292, 299, 305, 383, 385
Zukov S. 369
Zul'kova T.V. 315
Zvonarev E.V. 427
Zyulkova T.V. 075