**Title:** Mixed Valence Materials

**Authors:** William E. Geiger, Jr.

**Abstract:**
Spectroscopic and Magnetic Studies of a Mixed-Valence Iron Fluoride, Fe₂F₅·2H₂O were carried out. The Structure of a Mixed-Valence Iron Fluoride Fe₂F₅·2H₂O was determined. Magnetic Exchange in a Chloride- and Adeninium-Bridged Linear Trimer of Copper (II)-Octachlorobis- (adeninium) tricopper (II) Tetrahydrate was effected. Originator supplied keywords include.

**Distribution Statement (Of this Report):**
Unlimited

**Security Classification:** Unclassified
February 4, 1985

Dr. Ken Wynne
Chemistry Division Code 413
Research Programs
Office of Naval Research
800 North Quincy Street
Arlington, VA 22217

Dear Ken:

I understand from talking with Chris Allen that your office would like to obtain some information about Contract N00014-82-K-0289, for which the late David B. Brown was principal investigator. I have looked through Dave’s files and to the best of my information and recollection, tried to pull together on the enclosed sheets the requested information on personnel and publications. If there are any further questions, please give me a call.

Sincerely,

William E. Geiger Jr.
Professor of Chemistry

WEG/jms

cc: Mike Kelly
    Steve Stoddard
A) Personnel

1) Graduate students receiving Ph.D. who were supported by ONR

   Dr. Erick Walton (1979)
   Dr. Chester T. Dziobkowski (1979)
   Dr. Barry Cushman (1979)

2) Postdoctoral associates supported by ONR

   Dr. David Anderson
   Dr. Zbigniew Peplinski
   Dr. Fritz Wenk
   Dr. James Wrobleski

B) Publications


Preparation, Magnetic Susceptibilities, and Mossbauer Spectra of Dimeric and Polymeric Iron Complexes with Dihydroxybenzoquinones,

Interaction of Hydrazine with Copper (II) Chloride in Acidic Solutions. Formation, Spectral and Magnetic Properties, and Structures of Copper (II), Copper (I), and Mixed-Valence Species,

Synthesis, Magnetic Susceptibility, and Spectroscopic Properties of Single- and Mixed-Valence Iron Oxalate, Squarate, and Dihydroxybenzoquinone Coordination Polymers,

Physical and Chemical Properties of Squarate Complexes. II. Mossbauer Spectroscopy and Magnetic Susceptibility Studies of Several Dimeric and Trimeric Iron (III) Complexes Containing the Squarate Dianion,


Synthetic Approaches to Mixed-Valence Chemistry,

Applications of the Mossbauer Effect to the Study of Mixed-Valence Compounds,

Mixed-Valence Compounds.

A Study of the Variable-Temperature Magnetic Susceptibility of Two Ti(III) Oxalate Complexes,

A Method for Dispersing Compounds in Polystyrene Films for Spectroscopic Study,


"Magnetic and Spectroscopic Properties of Fe II\textsubscript{Fe} III\textsubscript{0}(CH\textsubscript{3}CO\textsubscript{2})\textsubscript{3}L\textsubscript{3}, L = H\textsubscript{2}O or C\textsubscript{6}H\textsubscript{14}N. Direct Observation of the Thermal Barrier to Electron Transfer in a Mixed-Valence Complex," C. T. Dziobkowski, J. T. Wroblewski, and D. B. Brown, Inorg. Chem. 20, 679 (1981).

"Reanalysis of the Thermal, Magnetic, and Spectra Properties of Cr\textsubscript{3}O(CH\textsubscript{3}COO)\textsubscript{6}(H\textsubscript{2}O)\textsubscript{3}Cl\cdot6H\textsubscript{2}O on the Basis of an Intercluster Spin-Exchange Model," J. T. Wroblewski, C. T. Dziobkowski, and D. B. Brown, Inorg. Chem. 20, 684 (1981).

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