

**FINAL REPORT**  
**AOARD 05-4029 (?)**

**Microstructural Evolution of Commercial-Purity  
Ti and Superplasticity of Ti-6Al-4V alloy  
Processed by Equal Channel Angular Extrusion**

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## Report Documentation Page

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## **Overview**

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The following report is composed of two papers those were published in Materials Science and Engineering A (vol.A410-411, 2005, 156-159) and Metallurgical and Materials Transactions A (vol.37, 2006, 381-391). In addition to colleagues at Hanyang University, collaborators were Prof. Chong Soo Lee of POSTECH (who was also under contract to AOARD) and Dr. Lee Semiatin of the Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson Air Force Base.

The work was begun under AOARD 034023, "Microstructure development of ultrafine grained Ti and superplasticity of Ti-6Al-4V alloy." Most of that effort was devoted to Ti-6Al-4V alloy. Much progress has been made over the more than two years of effort. We propose to complete our studies by studying, in detail, deformation mechanisms for the enhanced superplasticity in the ultrafine grained Ti-6Al-4V alloy with a special focus on the role of non-equilibrium grain boundaries.

