DEPARTMENT OF

ENERGY AND MINERAL ENGINEERING

COLLEGE OF EARTH AND MINERAL SCIENCES

EGEE/PNGE 590 Colloquium

MESOPOROUS OXIDE FOR PHOTOCATALYTIC WATER SPLITTING

Presented by: Yu Noda, PhD Candidate
Energy and Mineral Engineering Program

Abstract:

Water splitting to produce hydrogen and oxygen is among the most attractive applications of photocatalysis. Harvesting light energy is expected as a strong candidate for clean hydrogen production. Our previous research revealed that mesoporous tantalum oxide showed a good activity for this reaction under the light irradiation. However, its amorphous phase limits the application as a photocatalyst/catalyst due to relatively poor thermal/optical stabilities. In this study further investigation on the photocatalytic activity of mesoporous tantalum oxide was conducted, particularly to develop an effective crystallization method without structure collapse. The activity of successfully crystallized sample, treated with silicon compounds to support the porous structure, was improved by nearly one order of magnitude. To the best of our knowledge, this is the first report that describes the enhancement of photocatalytic characteristics by changing the solid phase structure of mesoporous materials.
.

Thursday, February 28, 2008
1:00 – 2:15 p.m.
157 Hosler Building

light refreshments will be served at 1:00 p.m.