Dear all,

Nanoparticles by Design Unit (Sowwan Unit) would like to invite you to a Special Lecture Series by **Prof. Bruce Clemens** (Stanford University, U.S.A) on the **Thermodynamics and Kinetics of Nanomaterials Synthesis**.

**Lecture 1** – Thermodynamics Review, Bond Counting and the Regular Solution Model, Chemical Potential

Date:　Tuesday, May 13rd

Time: 11:00am ~ 12:00pm

Venue: D014 (Lab 1, Level D)

**Lecture 2** – Surface Energies, the Gibbs-Thompson Effect, the Effect of Size on Vapor Pressure, Gibbs-Thompson Effect

Date: Friday, May 15th

Time: 11:00am ~ 12:00pm

Venue: C016 (Lab 1, Level C)

**Lecture 3** – Chemical Potential as the Driving Force for Kinetic Processes, Interface Attachment and Diffusion

Date: Wednesday, May 20th

Time: 11:00am ~ 12:00pm

Venue: C209 (Center Building, Level C)

**Lecture 4**– Nanoparticle Formation From Solutions, Nucleation, Interface Attachment, Diffusion, Growth Model, Controlling Size Distribution.

Date: Friday, May 22nd

Time: 11:00am ~ 12:00pm

Venue: C015 (Lab 1, Level C)

Date: Wednesday, May 27th

Time: 11:00am ~ 12:00pm

Venue: C016 (Lab 1, Level C)

**Lecture 5** – Nanowire Synthesis via the Vapor Liquid Solid Mechanism, Diffusion and Interface Limited Growth

Date: Wednesday, June 3rd

Time: 11:00am ~ 12:00pm

Venue: C016 (Lab 1, Level C)

**Bruce M. Clemens** is a professor in the Department of Materials Science and Engineering and is the Walter B. Reinhold Professor in the School of Engineering at Stanford University. His research interests include the synthesis, structure, and properties of thin film and nanostructured materials. He received his BS degree in engineering-physics from the Colorado School of Mines in 1978, and his MS and PhD degrees in applied physics from the California Institute of Technology (Caltech) in 1979 and 1983, respectively. From 1983 to 1988, Clemens was a Senior Research Scientist and then Staff Scientist in the Physics Department at General Motors Research Laboratory. In 1988, he was an Exchange Scientist at Hughes Research Laboratory and a Visiting Professor at Caltech. In 1989, he joined the faculty at Stanford. He served as department chair from 2000 to 2005, is a member of the Photon Sciences Faculty of SLAC National Accelerator Laboratory, and is also a professor of Applied Physics at Stanford, by courtesy. Clemens is the author of nearly 200 scientific papers and two patents. He was the recipient of the 1995 ASM Silver Medal for Research, and is a Distinguished Achievement Medalist from the Colorado School of Mines for 2009. He serves on the technical advisory boards and as a consultant for companies that span the range from large multinationals to small start-ups. He has been an active member of MRS since 1984 and has served four times as MRS Symposium Organizer and was a Meeting Chair of the 2001 Fall Meeting. Clemens served on the MRS Board of Directors from 2002 to 2005,  vice president/president-elect in 2011 and the president of MRS 2012.

Host: Mukhles Sowwam, Sowwan Unit

We look forward to seeing many of you.

Sincerely,

Yumi Takahashi

Nanoparticles by Design Unit (Sowwan Unit)