University of Tokyo-Chalmers University of Technology Workshop on Advanced Materials and Transmission Electron Microscopy

Date: March 30 2017
Place: Sanjo-Kaikan at UT Hongo Campus

March 30 2017 9:00-9:20 (Session Chair: Prof. Naoya Shibata)
Welcome: Prof. Yuichi Ikuhara (UT)
Greeting: Prof. Tatsuya Okubo (UT: Dean-elected)
Greeting: Prof. Eva Olsson (Chalmers)
Greeting: Mr. Hiroshi Ando (JSPS International)

Session 1: Battery Materials (Session Chair: Prof. Yuichi Ikuhara)
9:20-9:50: Prof. Aleksandar Matic (Chalmers)
“New materials concepts for high-capacity LiS-batteries”
9:50-10:20: Prof. Atsuo Yamada (UT)
“Alluaudites as Battery Electrode Framework”

10:20-10:50 Coffee Break

Session 2: In-situ TEM (Session Chair: Prof. Wolfgang Jäger)
10:50-11:20: Prof. Magnus Hörnqvist Colliander (Chalmers)
“In-situ studies of deformation, fracture and phase transformations”
11:20-11:50: Prof. Yuichi Ikuhara (UT)
“In-situ TEM observation of fracture and deformation in ceramics”
11:50-12:20: Prof. Eva Olsson (Chalmers)
“In-situ TEM of electrically, mechanically and thermally induced effects in nanostructured materials”

12:20-13:30 Photo & Lunch

Session 3: Porous and Composite Materials (Session Chair: Prof. Teruyasu Mizoguchi)
13:30-14:00: Prof. Anders Palmqvist (Chalmers)
“Development of Iron-Chelating Ordered Mesoporous Carbons for Noble Metal Free Fuel Cell Catalysts”
14:00-14:30: Prof. Tatsuya Okubo (UT)
“Zeolite Synthesis beyond the Traditional Common Senses”
14:30-15:00: Prof. Leif Asp (Chalmers)
“Effect of graphitic microstructure on electrochemical capacity of carbon fibre electrodes for structural battery composites”

15:00-15:30: Prof. Paul Erhart (Chalmers)
“From defects to alloys: Insight from atomistic simulations”
15:30-16:00: Prof. Teruyasu Mizoguchi (UT)
“Informatics for grain boundary research”

16:00-16:30 Coffee Break

Session 4: Theoretical calculation (Session Chair: Prof. Eiji Abe)
16:30-17:00: Prof. Uta Klement (Chalmers)
“White layer formation during hard turning of AISI 52100 steel”
17:00-17:30: Prof. Eiji Abe (UT)
“Structure and Unique Stabilization of Novel High-strength LPSO-Mg Alloys”
17:30-18:00: Prof. Wolfgang Jäger (Kiel/Chalmers)
“In Situ TEM Studies of Electrical Transport in III-V Semiconductor Nanowires under Strain”
18:00-18:30: Prof. Naoya Shibata (UT)
“Development of aberration-corrected differential phase contrast STEM for materials science”
18:40-20:30: Banquet (Ito International Research Center)
Date: March 31 2017 (Young Scientist Session)  
Place: Institute of Engineering Innovation (BLDG. 9)

**Session 6: In-situ TEM**
09:00-09:20: Eita Tochigi (UT)  
“Fracture surface analysis of alumina grain boundaries using in-situ TEM nanoindentation and atomic-resolution STEM”
09:20-09:40: Ludvig de Knoop (Chalmers)  
“High-resolution imaging revealing structural changes to Au nanocones during electron cold-field emission using *in situ* TEM”
09:40-10:00: Takaaki Sato (UT)  
“Development of MEMS combined with TEM setup for in-situ observation”
10:00-10:20: Norvik Voskanian (Chalmers)  
“In situ nanoscale thermal characterisation of carbon based nanostructures using electron diffraction techniques”

10:20-10:30  
Coffee Break

**Session 7: STEM for Materials Science**
10:30-10:50: Ryo Ishikawa (UT)  
“Three-dimensional Imaging by Large-angle Illumination STEM”
10:50-11:10: Andrew Yankovich (Chalmers)  
“Revealing new information about nanomaterials by improving the quality of STEM HAADF, EDS, and EELS data”
11:10-11:30: Fang Liu (Chalmers)  
“Atom probe tomography of thermally grown alumina on a FeCrAl alloy”

11:40-12:40: UT Microscope Tour

13:00: Lunch & JEOL Tour