

**The 5<sup>th</sup> International Symposium on Advanced  
Microscopy and Theoretical Calculations  
(AMTC5)  
Program**



**May 11 ~ 13, 2016  
WINC AICHI, Nagoya, Japan**

**Organized by the Nanostructures Research Laboratory,  
Japan Fine Ceramics Center (JFCC)**



# Invited Lectures

**Wednesday, May 11th, 2016**

9:50 – 10:00	<i>Opening Address</i>	AMTC Letters Page
Session 1	Chair: Yuichi Ikuhara ( <i>The University of Tokyo</i> )	
10:00 – 10:30 Invited	<b>Peter Nellist (<i>University of Oxford</i>)</b> Fast Pixelated Detectors in STEM for Quantitative Phase Imaging	2
10:30 – 11:00 Invited	<b>Naoya Shibata (<i>The University of Tokyo</i>)</b> Direct Electromagnetic Field Imaging of Materials by Differential Phase Contrast Scanning Transmission Electron Microscopy	4
11:00 – 11:30	<i>Coffee Break (30 min.)</i>	
Session 2	Chair: Koh Saito ( <i>Nagoya University</i> )	
11:30 – 12:00 Invited	<b>Robert Klie (<i>University of Illinois</i>)</b> In-Situ Materials Characterization at High Spatial Resolution: A Journey Through Liquids, Low Temperature and Beam Damage	6
12:00 – 12:30 Invited	<b>Syunsuke Kobayashi (<i>JFCC</i>)</b> Atomic Level Characterization of Lattice Defects in Crystals and Their Surfaces by Scanning Transmission Electron Microscopy	8
12:30 – 14:00	<i>Lunch (90 min.)</i>	
Session 3	Chair: Nobuo Tanaka ( <i>Nagoya University</i> )	
14:00 – 14:30 Invited	<b>Peter Crozier (<i>Arizona State University</i>)</b> Nanoscale Probing of Electronic Structure in Reducible Oxides with Monochromated Electron Energy-Loss Spectroscopy	10
14:30 – 15:00 Invited	<b>Tadahiro Kawasaki (<i>JFCC</i>)</b> Visualization of Reaction Site of Functional Material by Environmental TEM	52
15:00 – 15:30	<i>Coffee Break (30 min.)</i>	
Session 4	Chair: Tadahiro Kawasaki ( <i>JFCC</i> )	
15:30 – 16:00 Invited	<b>Haimei Zheng (<i>Lawrence Berkeley National Laboratory</i>)</b> Real Time Imaging of Materials Transformations in Liquid Environment	54
16:00 – 16:30 Invited	<b>Yoshifumi Oshima (<i>JAIST/Japan Advanced Institute of Science and Technology</i>)</b> <i>Operand</i> TEM Observation of Lithium Ion Battery	56
16:30 – 18:00	<i>Poster Session (odd numbers) &amp; Coffee</i>	

## Thursday, May 12th, 2016

Session 1      Chair: Isao Tanaka ( <i>Kyoto University</i> )		
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10:00 – 10:30 Invited	<b>Kiyoyuki Terakura (<i>NIMS/National Institute for Materials Science</i>)</b> Mechanism of Covalency Induced Polarization	70
10:30 – 11:00 Invited	<b>Hiroki Moriwake (<i>JFCC</i>)</b> Electronic Ceramics Research Combining Atomic Level Structure Analysis and Theoretical Calculations	72
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12:00 – 12:30 Invited	<b>Teruyasu Mizoguchi (<i>The University of Tokyo</i>)</b> Grain Boundary Informatics: Virtual Screening and Bayesian Inference	76
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# Poster Presentations

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4	Atom-resolved STEM-EDS study of solute segregation behavior in an yttria-stabilized zirconia grain boundary  <i>B. Feng, T. Yokoi, A. Kumamoto, M. Yoshiya, Y. Ikuhara, N. Shibata</i>	18
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