

Agenda¹

2nd WMRIF Workshop for Young Scientists August 31, 2010 to September 3, 2010

Venue

BAM Federal Institute for Materials Research and Testing
Headquarters
Main Lecture Hall - Building 5 - Ludwig-Erhard-Saal
Unter den Eichen 87
12205 Berlin
Germany

Monday, August 30, 2010

17:00 Pre-workshop-meeting, WMRIF-Presidential Board

Welcome Reception

19:00 at Hotel Steglitz International
Schloßstraße/Albrechtstraße 2, 12165 Berlin

Tuesday, August 31, 2010

Morning Session

8:30 Opening

Introduction of BAM

Prof. Dr. Manfred Hennecke, BAM-President

Introduction of WMRIF

Prof. Dr. Teruo Kishi, WMRIF-President

Technical Session (I): Materials challenges for nuclear fission and fusion

Chair: Prof. Dr. Thomas Böllinghaus, BAM, Germany

9:25 Keynote lecture

Matter under Extreme Conditions: Materials Development for Advanced Nuclear Energy Systems

Dr. Christian Mailhot, LLNL, Livermore, U.S.A.
(30 min + 5 min)

¹ Changes to the agenda are possible till the end of the workshop.

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Presentations by young scientists² (20 min + 5 min)

10:00 - *Examination of Dust Particles from Present-Day Controlled Fusion Devices*
Marcin Rosinski on behalf of Elzbieta Fortuna-Zalesna, University of Technology, Warsaw, Poland

10:25 - *Quantitative microstructural investigation of neutron-irradiated RAFM steel for fusion applications*
Oliver Weiß, KIT, Karlsruhe, Germany

10:50 - 11:20 Coffee break

11:20 - *Controlling Welding Residual Stresses by means of Alloy Design*
Arne Kromm, BAM, Berlin, Germany

11:45 - *Degradation Mechanism of Creep Strength Enhanced Ferritic Steels for Power Plants*
Kota Sawada, NIMS, Tsukuba, Japan

12:10 - *Electrochemical studies on pitting corrosion on Cr 13 piping steel exposed to CO₂ and artificial brine with high chloride concentration*
Oleksandra Yevtushenko, BAM, Berlin, Germany

12:35 - 13:30 Lunch break

Afternoon session

13:30 - Award Ceremony - Ostwald Fellowship

Prof. Dr. Manfred Hennecke

13:45 - Materials Research in future and expectation for young scientists
Prof. Dr. Teruo Kishi, Ostwald Fellow, Tsukuba, Japan

Technical Session (II): Materials challenges for nuclear fission and fusion (continued)

Chair: Prof. Dr. Thomas Böllinghaus, BAM, Berlin, Germany

Presentations by young scientists (20 min + 5 min)

14:15 - *Radiation-Resistant and Heat-Resistant Composites on the Basis of Boron and Silicon Containing Compounds and Mining Industry Waste*
Dima Kolovertnov, ISC RAS, Saint Petersburg, Russia

14:40 - *He bubble coarsening in Pu-Ga alloys at elevated temperature*
J. R. Jeffries, LLNL, Livermore, U.S.A.

15:05 - *Development of ¹⁰B₂O₃ processing for use in thermal neutron detectors*
L. F. Voss, LLNL, Livermore, U.S.A.

² Only the names of the scientists who present the papers are given.

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15:30 - 16:00 Coffee break

Technical Session (III): Materials challenges for water supply

Chair: Prof. Dr. Thomas Böllinghaus, BAM, Berlin, Germany

16:05 - Keynote lecture

Change of Drinking Water Quality due to Contact with Pipe Materials in Domestic Installations

Dr. Johann Wilhelm Erning (invited), BAM, Berlin, Germany (Invited)

Presentations by young scientists³ (20 min + 5 min)

16:40 - *Materials Challenges for Water Supply*

Sheng Meng, IPHY CAS, Beijing, China

17:05 - *Materials for Water Purification (Defluoridation)*

Srimanth Kagne, NEERI, Nagpur, India

17:30 - *Nanotechnology for Clean Water: Nanostructured Functionalized Materials for Removal and Detection of Arsenic*

Amit Bansiwala, NEERI, Nagpur, India

18:20 Leave for boat tour

Wednesday, September 1, 2010

Technical Session (IV): Challenges in conclusive, realistic and system oriented materials testing

Chair: Prof. Dr. Anne Ritschkoff, VTT, Espoo, Finland

8:30 Keynote lecture

Structural Chemistry of Nanoworld. New Page of Inorganic Chemistry

Prof. Dr. V. Ya. Shevchenko, ISC RAS, Saint Petersburg, Russia

Presentations by young scientists (20 min + 5 min)

9:00 - *Employment of high Resolution RBS to characterize ultrathin transparent electrode in high efficiency GaN based Light Emitting Diode*

Grace Huiqi Wang, IMRE,

9:25 - *A possible route to the quantification of piezoresponse force microscopy through correlation with electron backscatter diffraction*

T. L. Burnett, NPL, Teddington, United Kingdom

9:50 - *High Resolution Analysis of Tungsten Doped Amorphous Carbon thin Films*

Marcin Rasinski, University of Technology, Warsaw, Poland

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10:15 - *Electron Microscopy Studies on Oxide Dispersion Strengthened Steels*
Arup Dasgupta, IGCAR, Kalpakkam, India

10:40 - 11:00 Coffee break

11:00 - *Electrochemical Activity Measurements at the Nanoscale*
Andy Wain, NPL, Teddington, United Kingdom

11:25 - *Electrochemical Synthesis of Nanostructured Pd-based Catalyst and Its Application to On-Chip Fuel Cells*
Satoshi Tominaka, NIMS, Tsukuba, Japan

11:50 - *Characterization and Synthesis of PtRu/C Catalysts for Possible Use in Fuel Cells*
Eleanor Fourie, MINTEK, Randburg, South Africa

12:15 - 13:15 Lunch break

Afternoon session

Technical Session (V): Challenges in conclusive, realistic and system oriented materials testing (ctd.)

Chair: Dr. Carlos Achete, INMETRO, Rio de Janeiro, Brasil

13:15 - *Sol-Gel Synthesis and Investigation of Hybrid Phosphorosilicate Proton Conductive Nanocomposites*
Irina Tsvetkova, ISC RAS, Saint Petersburg, Russia

13:40 - *Accelerated Photocatalytic and Post-Illumination "Memory" Catalytic Disinfections of Microorganisms from Photoelectron Transfer between Nanoparticles and Visible Light Photocatalyst*
Qi Li, IMR CAS, Shenyang, China

14:05 - *Synthesis and Investigation of Silver-Peptides Bioconjugates*
Olga Golubeva, ISC RAS, Saint Petersburg, Russia

14:30 - *Characterization of Stabilized Zero Valent Iron Nanoparticles*
Lauren Greenlee, NIST, Boulder, U.S.A.

14:55 - 15:25 Coffee Break (15:00 - 17:00: Meeting of the Presidential board)

15:30 - *Combustion Synthesis of doped Ceria Nanoparticles*
Sumittra Charojrochkul, MTEC, Pathumthani, Thailand

15:55 - *Understandings of Solid Particle Impact and Bonding Behaviors in Warm Spray Deposition*
Makoto Watanabe, NIMS, Tsukuba, Japan

16:20 - *Mechanical properties of innovative metal/ceramic composites based on freeze-cast ceramic performs*
Siddhartha Roy, KIT, Karlsruhe, Germany

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16:45 - *Mini-Samples Technique in Tensile and Fracture Toughness Tests of Nano-Structured Materials*

Tomasz Brynk, University of Technology, Warsaw, Poland

17:10 - *New Method to Probe the Ion Beam Damage in Focused Ion Beam Applications on Graphite Based Structures*

Braulio Archanjo, INMETRO, Rio de Janeiro, Brasil

Evening - Meeting and Discussion of research collaboration

Thursday, September 2, 2010

Technical Session (VI): Challenges in conclusive, realistic and system oriented materials testing (ctd.)

Chair: Dr. Christian Mailhot, LLNL, Livermore, U.S.A.

9:00 - **Keynote lecture**

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Presentations by young scientists⁴ (20 min + 5 min)

9:45 - *Development of compact continuous-wave terahertz (THz) sources for frequency domain spectroscopy application*

Hendrix Tanoto, IMRE, Singapore

10:10 - *Inelastic Electron Tunneling Spectrum from Surface Magnon and Magnetic Impurity Scatterings in Magnetic Tunnel Junctions*

Hongxiang Wei, CAS IPHY, Beijing, China

10:35 - 11:00 Coffee break

11:00 - *Electrical Impedance Characterization of Cement-Based Materials*

Supaporn Wansom, MTEC, Pathumthani, Thailand

11:25 - *On the Use of Indentation Technique as an Effective Method for Characterising Food Materials*

Chaiwut Gamonpilas, MTEC, Pathumthani, Thailand

11:50 - *PhotoThermal Radiometry applied in nanoliter melted Tellurium alloys*

A. Cappella, LNE, France

12:15 - 13:15 Lunch break

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Afternoon session

Technical Session (VII): *Extraction and recovery of scarce elements and minerals*

Chair:

13:15 - *Biological Treatment of Solid Waste Materials from Copper, Steel and Recycling Industry*

Elina Merta, VTT, Espoo, Finland

13:40 - *Fe-N-C Electrocatalysts for the Oxygen Reduction Reaction based on the Oxalate-supported Pyrolysis*

U.I. Kramm, HZB, Germany

14:05 - NN3

14:30 - 15:25 Coffee Break

15:30 - Ceremony of the Best Paper Award

16:00 - Breakout discussion for research collaboration

16:45 - Summary and Closing

17:30 Excursion to Reichstag (Federal German Parliament)

Exploring Berlin

Friday, September 3, 2010

10:00 – Lab tour of BAM

Workshop Committee

Members of Working Group 3 Attracting the Young Scientists

Prof. Dr. Thomas Böllinghaus, BAM

Dr. Masaki Kitagawa, NIMS

Mr. Kei Kurosawa, NIMS

Dr. Alan I. Goldman, AMES Laboratory

Ms. Zhe Zhao, CAS Institute of Metal Research

Mr. Jose Ramirez, EWI

Prof. Dr. Gian Luca Bona, EMPA

Dr. Kiang Wee Lim, IMRE

Mr. Chang Geun Lee, KIST

Mr. Jean-Luc Laurent, LNE

Dr. César O. Pruneda, LLNL

Prof. Dr. Werasak Udomkitchdecha, MTEC

Prof. Dr. István Bársony, MFA

Prof. Dr. Anne Ritschkoff, VTT

Dr. Jürgen Lexow, BAM