

KINKEN-WAKATE 2010

Abstract: 7th Materials Science School for Young Scientists (KINKEN-WAKATE 2010) was held on December 2-3, 2010 in Sendai. Totally 91 people, including 83 graduate students and postdoctoral fellows were attended and enjoyed enthusiastic discussions on materials sciences.

The 7th Materials Science School for Young Scientists (KINKEN-WAKATE 2010) was subtitled as "Challenge of radiation for advanced materials science". This is a message for attendees so that energetic radiations induce quite interesting phenomena which result in degradation of materials' properties as well as in introduction of non-equilibrium phase. Both are indispensable for evaluations of materials lifetime and for development of new materials, respectively.

Based on the idea, the organizers invited the following lectures from Japan, US and France:

- Dr. Pascal Garin (IFMIF/EVEDA Project Leader, International Fusion Energy Research Centre),
- Dr. Roger E. Stoller (Oak Ridge National Laboratory),
- Prof H. Yamana (Kyoto University), and
- Prof H. Yasuda (Osaka University).

Applications from graduate students and postdoctoral fellows were finally 83. The contents were 12 from IMR, 6 from Graduate School of Science, 63 from Graduate School of Engineering, and 2 from Graduate School of Environmental Studies. 52 foreign students and postdocs were from 13 countries.

The program is as follows:

December 2nd (Thu)

13:00-13:15 Opening Remark: T. Goto (Chair of KINKEN-WAKATE, IMR)

13:15-14:15 Lecture 1: Dr. R.E. Stoller "Modeling radiation-induced microstructural evolution: different phenomena at different length and time scales"

14:15-15:15 Lecture 2: Prof. H. Yamana "Importance of advanced material research and heavy element chemistry for the successful use of nuclear energy in the future"

15:30-17:00 Poster Preview of Session A (2 min x 42)

17:00-18:30 Poster Session A

21:00-22:00 Free Discussion

December 3rd (Fri)

9:00-10:30 Poster Preview of Session B (2 min x 42)

10:30-12:00 Poster Session B

13:30-14:30 Lecture 3: Dr. Pascal Garin "Nuclear Fusion Energy and its Developments (ITER, IFMIF, DEMO)"

14:30-15:30 Lecture 4: Prof. H. Yasuda "Electron-irradiation-

induced phase transformations by TEM"

15:45-16:15 Closing & Poster Award

The lectures nicely summarized science of radiation effects in computer sciences, chemistry and electron microscopy, as well as engineering issues in nuclear energy and fusion energy. Quite a many of questions and discussions were raised to the lectures.

This time of KINKEN-WAKATE, poster preview sessions were arranged. They are 2-minute short presentations prior to the poster sessions. Poster sessions and the preview sessions were evaluated by 8 professors and nominated the following 8 young scientist for the best poster award:

Mr. M. Miyake "Development of Co-based alloy tools for friction stir welding of steels and Ti alloys",

Dr. S. Bosu "Observation of spin Seebeck effect in half-metallic full-Heusler alloy Co_2MnSi thin film",

Dr. L.H. Bai "Control of spin waves coupling through a DC current",

Mr. J.H. Choi "Comparisons of optical properties between polar and non-polar InGaN/GaN multiple-quantum-well light-emitting-diodes",

Mr. H. Kurita "Observation of CNT-AI interface in CNT/AI composite fabricated by spark plasma sintering/hot extrusion hybrid process",

Ms. L. Zhang "Wrinkled nanoporous gold films with ultrahigh SERS enhancement",

Mr. T. Kawamata "Structural study of the $\text{Zr}_{70}\text{X}_{30}$ ($\text{X}=\text{Cu}, \text{Ni}, \text{Pd}$) amorphous alloys by the AXS-RMC analysis", and

Ms. S. Komiyama "Effect of Heat Treatment on the Microstructure and Wear Properties of Ti-Mo-N films with Low Nitrogen Content".

We appreciate all participants for their contributions leading great success of this school.



Figure 1. KINKEN-WAKATE 2010 group photo

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