APAC SILICIDE 2010 PROGRAM

(update 2010/6/23)

July 24

13:00→ 13:20 *Opening address*, Y. Maeda, Chairman, APAC-SILICIDE 2010

Session I: Nano Silicide: Synthesis, Characterization, and Applications

13:20—14:20 **[24-PM-I-1]** ***Plenary***
Structure, Growth and Electrical Properties of Endotaxial Silicide Nanowires
P. A. Bennett, *Arizona State Univ., USA*

14:20—15:00 **[24-PM-I-3]** ***Invited***
Synthesis, Properties and Applications of Transition Metal Silicide Nanowires
J. M. Higgins, R. Ding, P. Carmichael, J. P. DeGrave, and Song. Jin
University of Wisconsin-Madison, USA

Break 15:00—15:20

15:20—15:40 **[24-PM-I-4]**
Simple Synthesis of ZrO_2/SiO_x Core/Shell Nanofibers Using $ZrSi_2$ with Gallium
Q. Yang, H. Kukino, [1]M. Tanaka, A. Ishida, and H. Tatsuoka,
Shizuoka University, [1]NIMS, Japan

15:40—16:00 **[24-PM-I-5]**
Fe_3Si Nanodots Epitaxially Grown on Si(111) Substrates Using Ultrathin SiO_2 Film Technique
Y. Nakamura, [1]S. Amari, and [1]M. Ichikawa
Osaka University, [1]University of Tokyo, Japan

16:10—17:40 **Poster Session I**

Session II: Silicide Basics

17:40—18:20 **[24-PM-II-1]** ***Invited***
Preparation of High Purity Metals for Advanced Devices
Prof. M. Isshiki, *Tohoku University, Japan*

18:20—18:40 **[24-PM-II-2]**
Magnetization of Bulk $Mn_{11}Si_{19}$ and Mn_4Si_7 Crystals
K. Hammura, [1]H. Udono, [2]I. J. Ohsugi, and [1]T. Aono
Hitachi Cambridge Lab., Cavendish Lab, UK, [1]Ibaraki University, [2]Salesio Polytechnic, Japan

18:40—19:00 **[24-PM-II-3]**
Effect of Deposition Rate and a-Si Precursor on Optical and Magnetic Properties of Iron Films on Silicon Substrates
[1]A. Gouralnik, [1,2]N. Galkin, and [2]V. Ivanov
[1]Lab. of Optics and Electrophysics of Nanostructures, Russia
[2]Far Eastern Branch of Russian Academy of Science, Russia

19:00—19:20 **[24-PM-II-4]**
Basic Properties of $Ba_{1-x}Sr_xSi_2$
M. Imai, National Institute for Materials Science, Japan

July 25

Session III: Nano-area Characterization

8:30—9:10 **[25-AM-III-1]** ***Invited***
Crystallographic Characteristics and Fine Structures of Semiconducting Silicides
G. Shao, *Univ. Bolton, UK*

9:10—9:50 **[25-AM-III-2]** ***Invited***
Advances in Laser Atom Probe and Its Applications to Semiconductor and Insulator Materials
K. Hono and T. Ohkubo
National Institute for Materials Science, Japan

9:50—10:10 **[25-AM-III-3]**
Photoabsorption Nano-Spectroscopy for Characterizing of β-$FeSi_2$ Nanoislands Grown on Si(111) and Si(001): Dependence on Substrate Orientation
N. Naruse, [1]Y. Nakamura, Y. Mera, M. Ichikawa, and K. Maeda
University of Tokyo, [1]Osaka University, Japan

Break 10:10—10:30

Session IV: Silicide Spintronics

10:30—11:10 **[25-AM-IV-1]** ***Invited***
Electrical Spin Injection and Detection in Si Using Ferromagnetic-Silicide Contacts
K. Hamaya and M. Miyao
Kyushu University, Japan

11:10—11:30 **[25-AM-IV-2]**
Ion Channeling Study of Epitaxy of Iron Based Heusler Alloy Films on Ge(111)
[1]T. Ikeda, [2]K. Narumi, [2]Y. Terai, [3]K. Hamaya, [3]T. Sadoh, [3]M. Miyao, and [1,5]Y. Maeda
[1]Kyoto University, [2]TIARA JAEA, [3]Osaka University, [4]Kyushu University, [5]ARSC JAEA, Japan

11:30—11:50 **[25-AM-IV-3]**
Fabrication of Fe_3Si/CaF_2 Heterostructures Ferromagnetic Resonant Tunneling Diode by Selected-Area Molecular Beam Epitaxy
K. Sadakuni-Makabe, M. Suzuno, K. Harada, [1]H. Akinaga, and T. Suemasu
University of Tsukuba, Japan , [1]AIST, Tsukuba, Japan

11:50—12:10 **[25-AM-IV-4]**
Significance of the Interface Regarding Magnetic Properties of Mn-Nanosilicide in Silicon
Y. Ono, [1]Y. Miyazaki, [1]S. Yabuuchi, H. Kageshima, M. Nagase, A. Fujiwara, and [1]E. Ota
NTT Basic Research Lab., Japan, [1]Keio University

Lunch Break 12:10—13:30

Session V: Silicide Devices and Optical Properties

13:30—14:10 **[25-PM-V-1]** ***Invited***
New Semiconducting Silicides Assembled from Transition-Metal-Encapsulating Si Custers
T. Kanayama, N. Uchida, and T. Miyazaki
National Institute of Advanced Industrial Science and Technology, Japan

14:10—14:30 **[25-PM-V-2]**
Iron Silicide Studies Towards Photonics
Y. Maeda
Kyoto University, Japan

14:30—14:50 **[25-PM-V-3]**

Growth, Structure and Luminescence Poperties of Multilayer Si/β-$FeSi_2$ NCs/Si/.../Si Nanoheterostructures

N. G. Galkin, E. A. Chusovitin, [1]T. S. Shamirsaev, [1]A. K. Gutakovski, [1]A. V. Latyshev

Far Eastern Branch of Russian Academy of Science, Russia

[1]Inst. Semiconductor Physics and Siberian Branch of Russian Academy of Science

Break 14:50—15:10

15:10—15:30 **[25-PM-V-4]**

Antireflection Coatings with $FeSi_2$ Layer-I: Application to Low-Reflective Wire-Grid Polarizers

M. Suzuki, [1]A. Takada, [1]T. Yamada, [1]T. Hayasaka, [1]K. Sasaki, [1]E. Takahashi, and [1]S. Kumagai

Kyoto University, [1]Sony Chemical & Information Device Corporation

15:30—15:50 **[25-PM-V-5]**

Band-gap Modifications of β-$FeSi_2$ Epitaxial Films by Lattice Deformations

Y. Terai, K. Noda, K. Yoneda, [1]H. Udono, [2]Y. Maeda, and Y. Fujiwara

Osaka University, [1]Ibaraki University, [2]Kyoto University

16:00—17:30 **Poster Sesson II**

18:30—20:30 **Banquet Ushiku Chateau**

http://www.ch-kamiya.jp/

July 26

Session VI: Silicide Green Technologies

8:30—9:10 **[26-AM-VI-1]** ***Invited***
Metal Induced Crystallization of Amorphous Silicon for Photovoltaic Solar Cells
D. Van Gestel, I. Gordon, and J. Poortmans
IMEC, Belgium

9:10—9:30 **[26-AM-VI-2]**
Photovoltaic Properties of n-Type β-$FeSi_2$/Intrinsic Si/p-Type Si Heterojunctions
T. Yoshitake, K. Nomoto, I. Shota, N. Promros, and [1]M. Shaban
Kyushu University, Japan, [1]South Valley University, Egypt

9:30—9:50 **[26-AM-VI-3]**
Photoresponse Properties of $BaSi_2$ Epitaxial Films Grown on the Tunnel Jnction for High-Efficiency Thin-Film Solar Cells
T. Saito, K. Toh, A. Okada, and T. Suemasu
University of Tsukuba, Japan

9:50—10:10 **[26-AM-VI-4]**
Computational Design of High Efficient $FeSi_2$ Thin-Film Solar Cells
Y. Gao, H.W. Liu, and [1]G. Shao
Hubei University, P. R. China, [1]University of Bolton, UK

10:10—10:30 **[26-AM-VI-5]**
Metalorganic Chemical Vapor Deposition of β-$FeSi_2$ on β-$FeSi_2$ Seed Crystals formed on Si substrates
M. Suzuno, K. Akutsu, H. Kawakami, [1]K. Akiyama, and T. Suemasu
University of Tsukuba, [1]Kanagawa Ind. Tech. Center, Japan

Break 10:30-10:50

10:50—11:10 **[26-AM-VI-6]**
Thermoelectric Properties and Power Generation Characteristics Sintered n-type Mg_2Si
T. Sakamoto, T. Iida, N. Fukushima, Y. Honda, M. Tada, [1]Y. Taguchi, [2]Y. Mito, H. Taguchi, and Y. Takanashi
Tokyo University of Science, [1]Union Material Inc., [2]Showa KDE Co., Ltd., Japan

11:10—11:30 **[26-AM-VI-7]**
Preparation and Thermoelectrical Properties of Higher Manganese Silicide Bulk Prepared From a Mn Compact Using a Na-Si Melt
T. Yamada, Y. Miyazaki, and H. Yamane
Tohoku University, Japan

11:30—11:50 **[26-AM-VI-8]**
Growth of Homogeneous $Mg_2Si_{1-x}Ge_x$ Crystals for Thermoelectric Application
Y. Hayakawa, M. Arivanandhan, Y. Saito, T. Koyama, Y. Momose, H. Ikeda, A. Tanaka, Cuilian Wen, Y. Kubota, T. Nakamura, Dinesh Kumar Aswal, [1]S. Bhattachary, [2]Y. Inatomi, and H. Tatsuoka
Shizuoka University, Japan, [1]Bhabha Atomic Research Center, India, [2]Japan Aerospace Exploration Agency, Japan

Closing 11:50→12:00