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Poster Session I

[24-P1]
Sr_2SiO_4 Flower-like Nanostructures Grown by Thermal Oxidation of $SrSi_2$ with Ga Droplets
Q. Yang, T. Yasuda, K. Ogino, [1]M. Tanaka, and H. Tatsuoka
Shizuoka University, [1]NIMS, Japan

[24-P2]
Formation of ultrahigh density iron-besed nanodots on Si (111) substrates using ultrathin SiO_2 films
H. Hamanaka, Y. Nakamura, K. Tanaka, J. Kikkawa, and A. Sakai
Osaka University, Japan

[24-P3]
Influence of $CrSi_2$ nanocrystals on the electrical properties of Au/p-Si/$CrSi_2$ NCs/n-Si diodes
N. G. Galkin, [1]L. Dózsa, E. A. Chusovitin, S. A. Dotsenko, [1]B. Pécz, and [1]L. Dobos
Far Eastern Branch of Russian Academy of Science, Russia
[1]Research Inst. for Technical Physics and Materials Science, Hungary

[24-P4]
Ultra high vacuum growth of $CrSi_2$ and β-$FeSi_2$ nanoislands and Si top layers on the plasma modified monocrystalline silicon surfaces
N. G. Galkin, [1]V. M. Astashynski, E. A. Chusovitin, K. N. Galkin, T. A. Dergacheva, [1]A. M. Kuzmitski, [1]E. A. Kostyukevich
Far Eastern Branch of Russian Academy of Science, Russia
[1]B.I.Stepanov Inst. Physics, Belarus

[24-P5]
Adhesion of Ag Atoms to In Surface Magic Clusters on Si(111)-7×7 Studied by UHV-TEM/STM
M. Tanaka and M. Shimojo
National Institute for Materials Science, Japan

[24-P6]
Influence of Si(111) $\sqrt{3}\times\sqrt{3}$ -R30°-Sb Surface Phase on the Formation and Conductance of Low-Dimensional Magnesium Silicide Layer on Si(111) Substrate
K. N. Galkin, D. L. Goroshko, and N. G. Galkin
Far Eastern Branch of Russian Academy of Science, Russia

[24-P7]
Formation of nanocrystalline $CrSi_2$ layers in Si by ion implantation and pulsed annealing
R. I. Batalov, R. M. Bayazitov, V. F. Valeev, [1]N. G. Galkin, [1]D. L. Goroshko, [1]K. N. Galkin, [1]S. V. Vavanova, [1]A. M. Maslov, [1]E. A. Chusovitin, [2]P. I. Gaiduk, [3]G. D. Ivlev, and [3]E. I. Gatzkevich
Kazan Physical-Technical Institute of Russian Academy of Science, Russia
[1] Far Eastern Branch of Russian Academy of Science, Russia
[2] Belarussian State University, Belarus, [3] Institute of Physics of NAS, Belarus

[24-P8]
Temperature dependence of direct transition energies in β-$FeSi_2$ epitaxial films on Si(111) substrate
K. Noda, Y. Terai, K. Yoneda, and Y. Fujiwara
Osaka University, Japan

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[24-P9]
Photoluminescence and Photoreflectance Studies in Si/β-$FeSi_2$/Si(001) Double Heterostructure
K. Yoneda, Y. Terai, K. Noda, N. Miura, and Y. Fujiwara
Osaka University, Japan

[24-P10]
Valence Electronic Structure of β-$FeSi_2$ Single Crystal Investigated by Photoelectron Spectroscopy Using Synchrotron Radiation
K. Ogawa, [1]M. Sasaki, [1]A. Ohnishi, [1]M. Kitaura, [2]H. Fujimoto, J. Azuma, K. Takahashi, and M. Kamada
Saga University, [1]Yamagata University, [2]Kumamoto University, Japan

[24-P11]
Ab initio calculation of (101) and (100) surface for β-$FeSi_2$
S. Tanimoto and T. Nagano
Ibaraki University, Japan

[24-P12]
Surface characterization of homoepitaxial β-$FeSi_2$ film on β-$FeSi_2$ (111) substrate by X-ray photoelectron and X-ray absorption spectroscopy
F. Esaka, H. Yamamoto, [1]H. Udono, [2]N. Matsubayashi, K. Yamaguchi, S. Shamoto, M. Magara, and T. Kimura
Japan Atomic Energy Agency, [1]Ibaraki University, [2]AIST, Japan

[24-P13]
Preparation and Physical Properties of Single Layer Iron-Silicide Films
N. Yasui, K. Kametomo, K. Takarabe, [1]H. Fujioka, [1]J. Hayashi, [1]R. Yarita, and [1]S. Nakamura
Okayama University of Science, [1]Tsuyama National College of Technology, Japan

[24-P14]
Surface analysis of single-crystalline β-$FeSi_2$
Y. Yamada, [1]M. Wei, [2]H. Asaoka, [2]H. Yamamoto, [2]F. Esaka, [1]H. Udono, and [2]T. Tsuru
University of Tsukuba, [1]Ibaraki University, [2]Japan Atomic Energy Agency, Japan

[24-P15]
Surface Structures on β-$FeSi_2$ Substructure Formed by Heat-treatment in Ultra-high Vacuum and Their Influence for Homoepitaxial Growth
S. Matsumura, K. Ochiai, H. Udono, [1]F. Esaka, [1]K. Yamaguchi, [1]H. Yamamoto, and [1]K. Houjo
Ibaraki University, [1] Japan Atomic Energy Agency, Japan

[24-P16]
Reduction of carrier concentrations of β-$FeSi_2$ films by atomic hydrogen-assisted molecular beam epitaxy
K. Akutsu, M. Suzuno, H. Kawakami, and T. Suemasu
University of Tsukuba, Japan

[24-P17]
Determination of Silicon Vacancy in Ion-Beam Synthesized β-$FeSi_2$
[1]T. Ichikawa, [1]T. Ikeda, [1]T. Jonishi, [2]K. Narumi, and [1,3]Y. Maeda
[1]Kyoto University, [2]TIARA JAEA, [3]ASRC JAEA, Japan

[24-P18]
Molecular beam epitaxy of β-$FeSi_2$ films on Si(111) substrates and its influence on minority-carrier diffusion length of Si measured by EBIC
H. Kawakami, M. Suzuno, K. Akutsu, [1]J. Chen, [1]Y. Fuxing, [1]T. Sekiguchi, and T. Suemasu
University of Tsukuba, Japan, [1]NIMS, Japan

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[24-P19]
Antireflection coatings with $FeSi_2$ layer-II: Application to spectrally-selective infrared emitter
Y. Kaneko, M. Suzuki, K. Nakajima, K. Kimura, [1]K. Akiyama, Y. Harutsugu, H. Wakabayashi, and T. Makino
Kyoto University, [1]Kanagawa Ind. Tech. Center, Japan

[24-P20]
On the Role of Induced Impurity Potential of β-$FeSi_2$
S. Kondo, M. Hasaka, and T. Morimura
Nagasaki University

[24-P21]
Fabrication and characterization of novel Fe(Os)Si_2 semiconductor
Y. Gao, H. W. Liu, Y. Lin, and [1]G. Shao
Hubei University, P. R. China, [1]University of Bolton, UK

[24-P22]
Iron Silicide Photonic Crystals and Properties of Light Propagation
Y. Maeda, S. Kunimatsu, and A. Imai
Kyoto University, Japan

[24-P23]
Transformation from ε-FeSi to β-$FeSi_2$ in RF-Sputtered $FeSi_x$ Films
N. Kawabata and K. Nakamura
Kansai University, Japan

[24-P24]
Effect of temperature modulation during temperature gradient solution growth of β-$FeSi_2$
Y. Ujiie, K. Nakamori, S. Mashiko, H. Udono, and [1]T. Nagata
Ibaraki University, [1]AIST, Japan

[24-P25]
Effect of Cu, Co Addition on β-$FeSi_2$ Growth by Molten Salt Method
M. Yamashita, C. Wen, T. Nonomura, T. Atsumi, Y. Hayakawa, and H. Tatsuoka
Shizuoka University, Japan

[24-P26]
Microstructure analysis of β-$FeSi_2$ grown on AuCu-coated Si(001) substrate
H. Kijima, M. Itakura, M. Nishida, and [1]K. Akiyama
Kyushu University, [1]Kanagawa Ind. Technology Center, Japan

[24-P27]
Thermal Process of Iron Silicides prepared by Magnetron sputtering
J. Zhang, Q. Xie, Y. Liang, W. Zeng, Q. Xiao, Q. Chen, D. Ma, Y. Wang, [1]K. Yamada, and J. Luo
Guizhou University, P. R. China, [1]Saitama University, Japan

[24-P28]
The Atomic Diffusion in the interface of Fe/Si prepared by Magnetron sputtering
[1,2]J. Zhang, [1]Q. Xie, [1]Y. Liang, [1]W. Zeng, [1]Q. Xiao, [1]Q. Chen, [2]V. Borjanovič, [3]M. Jakšič, [3]M. Karlusic, [3]B. Gržeta, [4]K. Yamada, and [4]J. Luo
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[24-P29]
The effect of crystalline structure on photoluminescence of the β-$FeSi_2$ film prepared by pulsed laser deposition using two types of target
M. Zakir Hossain, H. Katsumata, and S. Uekusa
Meiji University, Japan

[24-P30]
Phonon Properties of β-$FeSi_2$ and Their Correlation with Photoluminescence Properties
T. Nakajima, B. Matsukura, T. Ikeda, Y. Hiraiwa, and Y. Maeda
Kyoto University, Japan

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Poster Session II

[25-P1]
Temperature-Dependent Interlayer Couplings in $Fe_3Si/FeSi_2$ Artificial Lattices
S. Hirakawa, K. Sakai, [1]K. Takeda, and T. Yoshitake
Kyushu University, [1]Fukuoka Inst. Technology, Japan

[25-P2]
Magnetoresistance characteristics of $Fe_3Si/CaF_2/Fe_3Si$ heterostructures grown on Si(111) by molecular beam epitaxy
K. Harada, K. Sadakuni-Makabe, and T. Suemasu
University of Tsukuba, Japan

[25-P3]
Structural analyses of low-temperature-grown $Fe_{3+x}Si_{1-x}$ epilayers on Ge(111)
T. Murakami, S. Yamada, K. Hamaya, K. Mibu, and M. Miyao
Kyushu University, Japan

[25-P4]
Magnetooptical Properties of Epitaxial Film of Iron Based Heusler Alloys
[1,2]Y. Maeda, [1]T. Ikeda, [1]T. Icihkawa, [1]T. Nakajima, [1]B. Matsukura, [2]T. Sadoh, and [2]M. Miyao
[1]Kyoto University, [2]ASRC-Japan Atomic Energy Agency, [3]Kyushu University, Japan

[25-P5]
Effect of the atomic composition on interfacial structures in $Co_{3-x}Fe_xSi/Si(111)$ grown by low-temperature molecular beam epitaxy
S. Yamada, T. Murakami, K. Yamamoto, K. Hamaya, and M. Miyao
Kyushu University, Japan

[25-P6]
Toward the epitaxial growth of ferromagnetic γ'-Fe_4N on Si(001) substrates by molecular beam epitaxy
H. Lee, K. Ito, and T. Suemasu
University of Tsukuba, Japan

[25-P7]
Influence of Sputtering Power on the Structural and Morphological Properties of Semiconducting Mg_2Si Thin Films
Q. Q. Xiao, Q. Xie, Z. Q. Yu, and K. J. Zhao
Guizhou University, P. R. China

[25-P8]
Impurity doping and thermoelectrical properties of metl grown Mg_2Si and Mg_2Sn bulk single crystals
Y. Takahashi, H. Koguchi, M. Midonoya, and H. Udono
Ibaraki University

[25-P9]
Thermoelectric Performances of Mg_2SiSn doped with Bi
S. Tada, [1]Y. Isoda, H. Fujiu, T. Nagai, and [1]Y. Shinohara
Mitsuba Corporaton, [1]National Institute for Materials Science, Japan

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[25-P10]

The model of two-dimensional magnesium silicide phase with structure 2/3 $\sqrt{3}$ -R30° on Si(111)

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[25-P11]

AES and EELS study of desorption of magnesium silicide films on Si(111)

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Far Eastern Branch of Russian Academy of Science, Russia
[1]National Physical Laboratory, India
[2]Jawaharlal Nehru Center for Advance Scientific Research, India

[25-P12]

Silicon overgrowth atop low-dimensional Mg_2Si on Si(111): structure, optical and thermoelectrical properties

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[25-P13]

Growth, Optical and Electrical Properties of Ca_2Si Film Grown on Si(111) and Mg_2Si/Si(111) Substrates

S. A. Dotsenko, [1]D. V. Fomin, K. N. Galkin, D. L. Goroshko, and N. G. Galkin
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[1]Amur State University, Russia

[25-P14]

Study on the electronic structure and optical properties of the environmentally friendly semiconductor Ca_3Si_4

R. Gao and Q. Xie
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[25-P15]

Electrical properties of Ca_2Si sintered compact synthesized by Spark Plasma Sintering

C. Wen, T. Nonomura, Y. Warashina, [1]A. Kato, Y. Kubota, T. Nakamura, Y. Hayakawa, and H. Tatsuoka
Shizuoka University, [1]FDK Corporation, Japan

[25-P16]

Thermoelectric Properties of Sputtered Iron-Silicide

S. Nakamura, Y. Marumoto, M. Mimura, D. Sugiyama, [1]T. Kittaka, [1]K. Kametome, [1]N. Yasui, and [1]K. Takarabe
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[25-P17]

Thermoelectric properties of group VI metal silicide semiconductors

T. Nonomura, C. Wen, M. Yamashita, K. Isobe, [1]A. Kato, Y. Kubota, T. Nakamura, Y. Hayakawa, and H. Tatsuoka
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[25-P18]

Synthesis and characterization of sodium monosilicide

K. Shirai, [1]T. Yamada, [1]H. Morito, [1]H. Yamane, and H. Tatsuoka
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[25-P19]
Preparation and Electrical Properties of $MnSi_{1.7}$ Powder by Reaction of $MnCl_2$ and Si Powder
J. Hu, W. Li, S. Guan, and [1]H. Tatsuoka
Zhengzhou University, P. R. China, [1]Shizuoka University, Japan

[25-P20]
Chemical Trends of the Band Gaps in Semiconducting Silicon Clathrates
Y. Imai and A. Watanabe
AIST, Japan

[25-P21]
First-principles Calculations on the Electronic Structure and Optical Properties of Mg_2Si Epitaxial on Si(111)
Q. Chen and Q. Xie
Guizhou University, P. R. China

[25-P22]
Preparation of Schottky contacts on n-type Mg_2Si single crystalline substrate
K. Sekino, M. Midonoya, H. Udono, and [1]Y. Yamada
Ibaraki University, [1]University of Tsukuba, Japan

[25-P23]
Al- and Cu-doped $BaSi_2$ films on Si (111) substrate by Molecular Beam Epitaxy and Evaluation of Depth Profiles of Al and Cu atoms
M. Ajmal Khan, M. Takeishi, Y. Matsumoto, T. Saito, and T. Suemasu
University of Tsukuba, Japan

[25-P24]
Growth of Al-doped p-type $BaSi_2$ films by molecular beam epitaxy and the effect of high-temperature annealing on their electrical properties
M. Takeishi, Y. Matsumoto, R. Sasaki, T. Saito, and T. Suemasu
University of Tsukuba

[25-P25]
Formation of poly-Si layers on AZO/SiO_2 substrates and anti-reflection coating with AZO films for $BaSi_2$ solar cells
A. Okada, R. Sasaki, Y. Matsumoto, M. Takeishi, T. Saito, K. Toh, [1]N. Usami, and T. Suemasu
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[25-P26]
Fabrication of $BaSi_2$ films on transparent CaF_2(111) substrates by molecular beam epitaxy for optical characterization
K. Toh, T. Saito, A. Okada, M. A. Khan, [1]N. Usami, and T. Suemasu
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[25-P27]
Epitaxial Growth of $BaSi_2$ Film by Magnetron Sputtering
Y. Ziyi, H. Zhengtong, and X. Quan
Guishou University, P. R. China

[25-P28]
Characterization of n-Type Nanocrystalline $FeSi_2$/p-Type Si Photodiodes Prepared by Facing-Targets Direct-Current Sputtering at Room Temperature
N. Promros, K. Kawai, [1]M. Shaban, and T. Yoshitake
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[25-P29]
n-Type β-$FeSi_2$/p-Type Si Photodiodes Operating at Low Temperatures
S. Izumi, N. Promros, [1]M. Shaban, and T. Yoshitake
Kyushu University, Japan, [1]South Valley University, Egypt

[25-P30]
Behavior of nickel silicide in multi-crystalline silicon for solar cells
T. Tachibana, T. Samejima, [1]K. Arafune, [2]Y. Ohshita, and A. Ogura
Meiji University, [1]University of Hyoto, [2]Toyota Tech. College, Japan

[25-P31]
Demonstration of Near-Inrfared Light Detection in n-Type Nanocrystalline-$FeSi_2$/intrinsic-Si/p-Type Si Heterojunctions
N. Promros, [1]M. Shaban, K. Kawai, and T. Yoshitake
Kyushu University, Japan, [1]South Valley University, Egypt