IUMRS-ICEM 2018 August 19(Sun.)~24(Fri.), 2018 / DCC, Daejeon, Korea

IUMRS-ICEM
2018 AUGUST 19(SUN.) - 24(FRI.)
DAEJEON, KOREA

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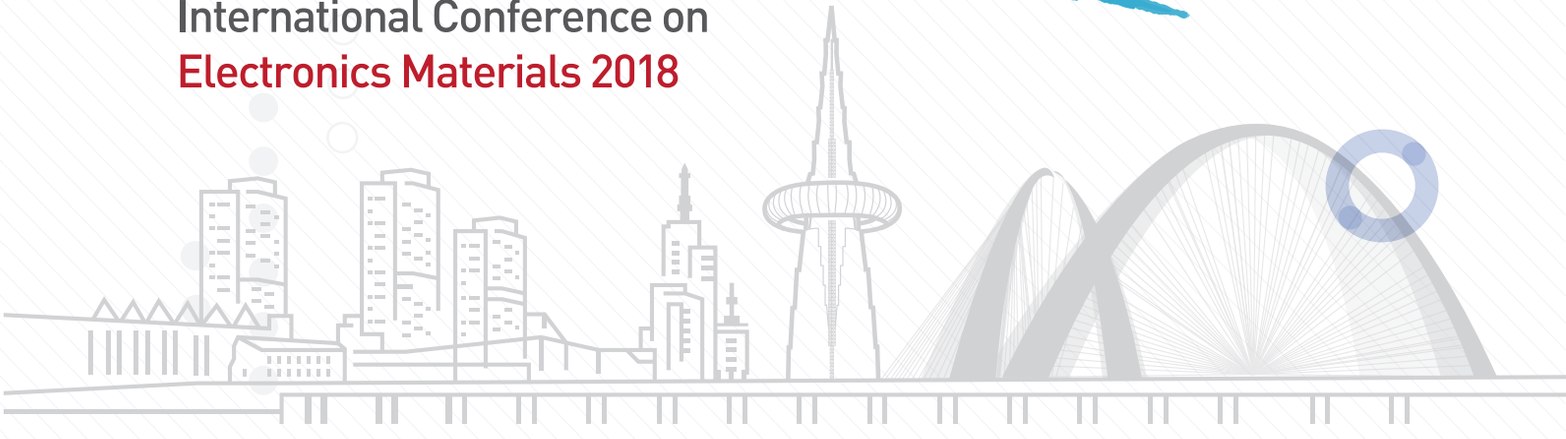
Program Book

International Union of
Materials Research Societies –
International Conference on
Electronics Materials 2018



Organized by MRS KOREA 한국재료학회 Materials Research Society of Korea · International Union of Materials Research Societies

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Room F #106 13:30-15:30

[We-F2] Flexible Organic Electronics
Session Chairs:
Jiyoul Lee (Pukyong Nat'l Univ., Korea),
Ashutosh Kumar Tripathi (IIT, Korea)

We-F2-1 [Invited] 13:30-14:00

Low-Voltage, Flexible Thin-Film Transistors by Polymer Electrolytes

Keun Hyung Lee, Hae Min Yang, Hyun Je Kim, and Kyung Gook Cho
Inha Univ., Korea

We-F2-2 [Invited] 14:00-14:30

Vapor-Phase Deposited Polymeric Thin Films

Sung Gap Im
KAIST, Korea

We-F2-3 14:30-14:45

Effects of Fluorine Atoms in Triblock-Copolymer based Dielectric Layers on Charge Transporting Characteristics via DPP-based D-A Type Semiconducting Polymer Films

Yi-Na Moon[1], Jong-Woon Ha[2], Jiyoul Lee[1], and Do-Hoon Hwang[2]
[1]Pukyong Nat'l Univ., Korea, [2]Pusan Nat'l Univ., Korea

We-F2-4 14:45-15:00

Influence of Fluoroalkyl Side-Chain on Charge Transporting Properties in DPP-BTZ D-A Type Conjugated Copolymer Films

Do Hyeon Jeong[1], Seok-Heon Jung[2], Jin-Kyun Lee[2], and Jiyoul Lee[1]
[1]Pukyong Nat'l Univ., Korea, [2]Inha Univ., Korea

Room G #107 13:30-15:30

[We-G2] Nano Structure/Surface Engineering II
Session Chairs:
So Nagashima (Osaka Univ., Japan),
Myoung-Woon Moon (KIST, Korea)

We-G2-1 [Invited] 13:30-14:00

Ultrasensitive Low-Cost Nanoporous Composites with a Wide Pressure Sensing Range for Tactile Sensors

Sung Hoon Kang, Jing Li, Santiago Orrego, Junjie Pan, and Peisheng He
Johns Hopkins Univ., USA

We-G2-2 [Invited] 14:00-14:30

Controlling Wave Transport in Periodic and Quasiperiodic Structures

Kahyun Hur
KIST, Korea

We-G2-3 14:30-14:45

Hybridization of Multi-Dimensional Metal-Organic-Frameworks for Heterogeneous Metal Oxide Architectures: Toward Sensitive Chemiresistor

Ji-Soo Jang, Won-Tae Koo, Dong-Ha Kim, and Il-Doo Kim
KAIST, Korea

We-G2-4 14:45-15:00

ZnO-based N-p Composite Nanofibers for Hydrogen Gassensors

Jae-Hyoung Lee, Jae-Hun Kim, Jin-Young Kim, and Sang Sub Kim
Inha Univ., Korea

We-G2-5 15:00-15:15

Surface Phase Diagram of GaAs(001) Considering the Vibrational Thermal Energy by Ab-Initio Calculation

In Won Yeu[1], Gyuseung Han[1], Cheol Seong Hwang[1], and Jung-Hae Choi[2]
[1]Seoul Nat'l Univ., Korea, [2]KIST, Korea

We-G2-6 15:15-15:30

Different Bismuth Oxide Nanostructure Grown on Ni-Foam for Supercapacitor Application

Nanasaheb Shinde N. M.
Pusan Nat'l Univ., Korea

Surface phase diagram of GaAs(001) considering the vibrational thermal energy by *ab-initio* calculation

In Won Yeu[1,2], Gyuseung Han[1,2], Cheol Seong Hwang[2], and Jung-Hae Choi[1]*

[1]*Center for Electronic Materials, Korea Institute of Science and Technology, Seoul 02792, Korea*

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As GaAs is a representative III-V compound semiconductor material for beyond-Si switching devices, understanding the GaAs(001) surface has crucial effects on the development of the next generation devices. Numerous experimental studies have investigated the surface reconstruction of GaAs(001) as a function of temperature (T) and pressure (P). On the other hand, there has few reliable calculations that directly matched the experimental observations on the surface structure at a given T-P condition, although various theoretical calculations were also performed. This is because the conventional ab-initio calculations are performed at 0K and some ab-initio calculations have considered the temperature and/or pressure as a function of chemical potential, which cannot be directly controlled in experimental procedures. Recently, this group predicted the equilibrium fraction of various reconstructions for a given T-P condition by taking into account both the vibrational entropy and configurational entropy in the framework of density functional thermodynamic calculations for InAs(001) [1]. In this study, surface phase diagram of GaAs(001) was calculated considering the difference in the vibrational thermal energy between the surface and the bulk. By comparison with a lot of experimental observations, it was confirmed that the GaAs(001) reconstruction can be successfully predicted by considering the surface vibration at any experimental T-P region.

[1] Sci. Rep. 7, 10691 (2017).