

Bong-Joong Kim

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Education

- Ph.D.: Materials Engineering, Purdue University (Aug. 2004-Present)
- M.S.: Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Department of Materials Science and Engineering (Mar.2001-Feb.2003); Advisor: Tae-Yeon Seong
Thesis: Structural characterization of rocksalt-CdO and ordered-GaInP semiconducting layers
- B.S.: Metallurgical Engineering and Materials Science, Hong-ik University, Department of Metallurgical Engineering and Materials Science (Mar.1993-Feb.2001), Military service (mandatory in Korea) (1995-1997)

Work Experience

- Research Assistant, Purdue University (Aug. 2004-Present)
Growth and characterization of semiconductor nanowires and their electronic and optoelectronic device applications
- Teaching Assistant, Purdue University
Materials Characterization Laboratory (MSE 335) (Aug. 2005-Dec. 2005)
- Research Assistant (government-sponsored), GIST, Semiconductor Thin Film Laboratory, Advisor: Tae-Yeon Seong (Mar.2001-July.2004)

Research Topics

1. **Ordering and Phase Separation in III-V and Related Alloy Semiconductors:** Structural and Optical Properties - in collaboration with Prof. G.B. Stringfellow from the University of Utah and Prof. G.R. Booker from Oxford University
2. **Growth Characteristics of GaN (As,P) and GaInN Layers** - in collaboration with Prof. C.W. Tu from the University of California San Diego, and Prof. I. Suemune from Hokkaido University
3. **Growth Characteristics and Defect Structures of ZnO layers and Quantum Dots** - in collaboration with Prof. I. Suemune from Hokkaido University
4. **Ohmic and Schottky contacts to wide bandgap semiconductors:** fabrication and characterization

Courses, taken selectively

- **Graduate Courses (GIST):** Microelectronic Materials, Structure and Defects of Solids, Advanced Physical Chemistry of Materials, Solid State of Physics, Physical Chemistry of Solid Surfaces, Thin Film Technology, Semiconductor Device Physics, Semiconductor Materials and Devices.
- **Undergraduate Courses (Hong-ik University):** Phase Transformation in Materials, Physical Metallurgy, Materials strengthening, Electromagnetic Materials, Magnetic Materials, Ceramics ...

Publications

1. A. D. Howard, L. Rieth, D. C. Chapman, R. R. Wixom, G. B Stringfellow, **Bong-Joong Kim**, and T.-Y. Seong "Effects of Br and Cl on OMVPE growth and ordering in GaInP" J. Appl. Phys., vol.95, No.2319 (2004)
2. **Bong-Joong Kim**, Y.-W. Ok, T.-Y. Seong, A.B.M.A. Ashrafi, H.Kumamo, I. Suemune. "Structural properties of CdO layers grown on GaAs(001) substrates by metal-organic molecular beam epitaxy" Journal of Crystal Growth, Vol.252: 219-225.(2003)
3. **Bong-Joong Kim**, Y.-W. Ok, T.-Y. Seong, G.B.Stringfellow, D.C.Chapman "Heterostructures in GaInP grown using a change in N doping" submitted to Semiconductor Science Technology
4. Sasikala Ganapathy, X. Q. Zhang, I. Suemune, Katsuhiko Uesugi, Hidekazu Kumano, **Bong-Joong Kim**, T.Y. Seong "GaNAs as Strain Compensating Layer for 1.55 μ m Light Emission from InAs Quantum Dots" Jpn. J. Appl. Phys. Vol. 42: 5598-5601. (2003)
5. I. Suemune, K. Uesugi, S. Ganapathy, X. Q. Zhang, M. Kurimoto, **Bong-Joong Kim**, T.Y. Seong, H. Machida and N. Shimoyama "III-V-N related quantum structures for 1.5 μ m emission" IEE Proc.-Optoelectron., Vol.150, No. 1, Feb. (2003)
6. G.B.Stringfellow, D.C.Chapman, **Bong-Joong Kim** and T.Y. Seong "Use of Surfactants in Organometallic Vapor Phase Epitaxy" Proceedings of Chemical Vapor Deposition 16th (ECS meeting, Paris, France, Spring 2003), Invited paper Vol.1, P 287

Conferences

1. I. Suemune, A.B.M.A. Ashrafi, M. Kurimoto, H.Kumamo, **Bong-Joong Kim**, Y.W. Ok and T.Y. Seong "Properties of ZnO and Related Materials grown by MOMBE" the 1st NIMS International Conference for Photonics, March 17-19, 2003, Tsukuba, Invited paper session1, I-4
2. **Bong-Joong Kim**, Y.-W. Ok, T.-Y. Seong, A.B.M.A. Ashrafi, H. Kumano, and I. Suemune, "Structural Properties of Rocksalt CdO Layers Grown on GaAs (001) Substrates by Metalorganic Molecular-beam Epitaxy" the 11th International Symposium on the Physics of Semiconductors and Applications, 20-23 August 2002, Jeju, Korea
3. Sasikala Ganapathy, Xi Qing Zhang, Katsuhiko Uesugi, Hidekazu Kumano, Ikuo Suemune, **Bong-Joong Kim**, and T. Y. Seong: "Effect of GaNAs stain compensating layer on InAs

quantum dots grown by MOMBE" *the 14th Indium Phosphide and Related Materials Conference May 12-16, 2002, Stockholm, Sweden, PII-16, Conference Proceedings pp. 557-560.*

4. I. Suemune, A. B. M. A. Ashrafi, H. Kumano, **Bong-Joong Kim**, Y.-W. Ok, and T.-Y. Seong: "Control of Structural and Electrical Properties of ZnO and Related Materials" *the 3rd International Workshop on II-VI Heterostructures, October 9 to 11, 2002, Wuerzburg. (Invited paper)*
5. Sasikala Ganapathy, Xi Qing Zhang, Katsuhiko Uesugi, Hidekazu Kumano, Ikuo Suemune, **Bong-Joong Kim** and Tae-Yeon Seong, "1.55 μm light emission from InAs quantum dots buried in GaNAs strain-compensating layer at room temperature" *The 26th International Conference on the Physics of Semiconductors, July 29-August 2, 2002 (Edinburgh)*

Professional Skills

• Equipment Skills

TEM (JEOL, 2000-FX), TEM sample preparation skills, SEM (JEOL, JSM-5800), AFM (Atomic Force Microscopy), XRD (X-Ray Diffraction), PL (Photoluminescence) system, RTA (Rapid Thermal Annealing) system, E-beam evaporator

• Computer Skills

OS: Microsoft Windows 98, XP 2000; Software: Microsoft Office, Origin, AutoCAD, Adobe Photoshop and Mathematica

Academic Scholarships

- Mar. 2001-Feb. 2003: Korean Government Scholarship, GIST, Kwangju, Korea
- Sep. 1999-Feb. 2001: full scholarship for academic excellence, three semesters, Hong-ik University, Seoul, Korea

Activities

- Vice-president, Student Council, Department of Material Science and Engineering, Hong-ik University (1993)
- Representative, Christian Student Association (1998-2002)
- Member, Korea Association of Welfare Centers for the Disabled (KAWCD) (2000)

References

- Professor Eric A. Stach, Associate Professor, Purdue University; e-mail: eastach@purdue.edu
- Professor Tae-Yeon Seong, Professor, Korea University; e-mail: tyseong@korea.ac.kr
- Professor Tae-Sung Oh, Professor, Hong-ik University; e-mail: ohts@hongik.ac.kr

