Curriculum Vitae

Name: Kumar Sidhartha Kesav Varadwaj

Designation: Assistant Professor
Subject: Chemistry

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Professional Experience:

March 2008 – April 2010	Postdoctoral researcher at Research Center for Integrated Quantum Electronics (RCIQE), Hokkaido University, Japan.
Oct 2005 - Feb 2008	Postdoctoral researcher at Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea.

Education:

1993-1996	BSc, Stewart Science College, Cuttack.
1996-1998	Master in Science, Ravenshaw College.
Jan 2001 - April 2005	PhD, Indian Institute of Technology Kharagpur, India.

Area (s) of specialization: (Five Lines**)**
Magnetic and Semiconductor Nanoparticles and Nanowires. Spintronics in Nanomaterials. Noble Metal Nanoparticles and Nanowires for applications in Surface Enhanced Raman Spectroscopy. Simulation of electromagnetic radiation in nanomaterials by FDTD technique.

Publications:

14. Junichi Motohisa, Katsuhiro Tomioka, Bin Hua, **Kumar S. K. Varadwaj**, Shinjiroh Hara, Kenji Hiruma, and Takashi Fukui "Chapter 8: III-V Semiconductor Nanowire Light Emitting Diodes and Lasers." Book Chapter in press.

13 Y. Yoo, K. Seo, S. Han, **Kumar S. K. Varadwaj**, H. Kim, J. Ryu, H. Lee, J. Ahn, H. Ihee, B. Kim, "Steering epitaxial alignment of Au, Pd, and AuPd nanowire arrays by atom flux change", *Nano Letters* 2010, 10, 432.
Impact factor: 10.371

12. Kwanyong Seo, Sunghun Lee, Hana Yoon, Juneho In, **Kumar S. K. Varadwaj**, Younghun Jo, Myung-Hwa Jung, Jinhee Kim, and Bongsoo Kim; "Composition-Tuned Co*n*Si Nanowires: Location-Selective Simultaneous Growth along Temperature Gradient." *ACS Nano* 2009, *3* (5), 1145.
Impact factor: 5.472

11. Hana Yoon, Kwanyong Seo, Heesung Moon, **Kumar S. K. Varadwaj**, Juneho In, and Bongsoo Kim; "Aluminum Foil Mediated Noncatalytic Growth of ZnO Nanowire Arrays on an Indium Tin Oxide Substrate." *J. Phys. Chem. C* 2008, 112 (25), 9181.
Impact factor: 3.396

10. Juneho In, **Kumar S. K. Varadwaj**, Kwanyong Seo, Sunghun Lee, Younghun Jo, Myung-Hwa Jung, Jinhee Kim, and Bongsoo Kim; "Synthesis and Magnetic Properties of Single Crystalline $Fe_{1-x}Co_xSi$ Nanowires a Ferromagnetic Semiconductor." *J. Phys. Chem. C* 2008, 112 (12), 4748.
Impact factor: 3.396

9. **Kumar S. K. Varadwaj**, Kwanyong Seo, Juneho In, Paritosh Mohanty, Bongsoo Kim; "Phase controlled growth of metastable Fe_5Si_3 nanowires by a vapor transport Method" *J. Am. Chem. Soc.* 2007, 129, 8594-8599.
Impact factor: 8.091

8. Kwanyong Seo*, **K. S. K. Varadwaj***, Paritosh Mohanty, Younghun Jo, Myung-Hwa Jung, Bongsoo Kim; "Magnetic properties of Single crystalline CoSi nanowires" *Nano Letters* 2007, 7(5), 1240.
(* These authors contributed equally to this work)
Impact factor: 10.371

7. Paritosh Mohanty, Ilsun Yoon, Taejoon Kang, Kwanyong Seo, **Kumar S. K. Varadwaj**, Wonjun Choi, Q-Han Park, Jae Pyung Ahn, Hyotcherl Ihee, and Bongsoo Kim; "Simple Vapor Phase Synthesis of Single-Crystalline Ag Nanowires and Single-Nanowire Surface-Enhanced Raman Scattering." *J. Am. Chem. Soc.* 2007, 129, 9576.
Impact factor: 8.091

6. Kwanyong Seo,* **Kumar S. K. Varadwaj**,* Dongkyu Cha, Juneho In, Jiyoung Kim, Jeunghee Park, and Bongsoo Kim; "Synthesis and electrical properties of single crystalline $CrSi_2$ nanowires." *J. Phys. Chem. C* 2007, 111, 9072-9076.
(* These authors contributed equally to this work)
Impact factor: 3.396

5. **K. S. K. Varadwaj** and J.Ghose; "Effect of capping on the magnetization of nanocrystalline γ-Fe_2O_3" Ninth International Conference on Ferrites (ICF-9), pub. American Ceramic Society, 2004, p.841.

4. **K. S. K. Varadwaj**, J.Ghose; "Synthesis and Characterisation of polyol capped transition metal oxide nanoparticles" *Journal of Nanoscience and Nanotechnology* 2005, 5(4), 627-634.
Impact factor: 1.929

3. Jayasree Ghose; **K. S. K. Varadwaj**; "A process for the synthesis of capped nanocrystalline γ-Fe_2O_3" Indian Pat. Appl. (2005), 7pp. CODEN: INXXBQ IN 2003KO00320 A 20050204 CAN 147:413030 AN 2007:233059.

2. **K.S.K. Varadwaj**, M.K. Panigrahi and J.Ghose; "Effect of capping and particle size on Raman laser-induced degradation of γ-Fe_2O_3 nanoparticles" *Journal of Solid State Chemistry* 2004, 177(11), 4286-4292.
Impact factor: 1.91

1. J.Ghose, **K. S. K. Varadwaj**, D.Das; "Mössbauer Studies on Nanocrystalline Diol Capped γ-Fe_2O_3" *Hyperfine Interactions* 2004, 156, 63-67.

Conference Presentations:

1. Participated in Summer School on "Solid State and Materials Chemistry" during 4-22 July 2005, Indian Institute of Science, Bangalore.

2. K. Seo, **K.S.K. Varadwaj**, P. Mohanty, Y. Jo, M. –H. Jung, and B. Kim, "Magnetic Properties of Superlattice CoSi Nanowires", **The 2007 Spring MRS meeting**, April 9-13, 2007, Moscone West Convention Center in San Francisco, California.

3. K. Seo, **K.S.K. Varadwaj**, and B. Kim, "Magnetic Properties of Single Crystalline CoSi Nanowires", 99th Spring Meeting of the Korean Chemical Society, Apr.19-20, 2007, COEX, Korea.

4. K. Seo, **K.S.K. Varadwaj**, D. Cha, J. In, J. Kim, and B. Kim, "Synthesis and electrical properties of single crystalline $CrSi_2$ nanowires", 99th Spring Meeting of the Korean Chemical Society, Apr.19-20, 2007, COEX, Korea.

5. **K.S.K. Varadwaj**, K. Seo, J. In, and B. Kim, "Phase controlled synthesis of single crystalline Fe_5Si_3 nanowires", 99th Spring Meeting of the Korean Chemical Society, Apr.19-20, 2007, COEX, Korea.

6. **K.S.K. Varadwaj**, K. Seo, J. In, and B. Kim "Silica Coated Freestanding Fe_5Si_3 Nanowires with Room Temperature Ferromagnetism" **European Science foundation- EMBO symposium,** Bio magnetism and Magnetic Biosystems based on molecular recognition processes, Sant Feliu de Guixols Spain 22-27 September 2007.

7. **Contributory Talk: Kumar S. K. Varadwaj,** J. Motohisa, S. Soundeswaran, T. Sato, B. Hua, M. vanKouwen, V. Zwiller, S. Hara, T. Fukui "Highly polarized lasing emission in single GaAs/AlGaAs/GaAs core-shell nanowires". The 3rd International Conference on One-dimensional Nanostructures (ICON 2009), Atlanta, Georgia U. S. A. December 7-9 2009.

Conferences/ Workshops/ Training Programs Organized: (Five major & recent ones)

Research Projects, Evaluation Research, Consultancies: (Five major & recent ones**)**

Advisory & Editorial Boards:
Referee to the following journals
1. Nanotechnology
2. Applied Physics Letters

Honours, Fellowships:

1. BK21 Fellow, KAIST, South Korea (2005-2008).
2. CSIR, SRF, IIT Kharagpur (2005).

Membership in Professional Bodies:
Personal Information: