SANTOSH KUMAR

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OBJECTIVE: To obtain a challenging industrial position in which I can use and further my educational background and knowledge.

EDUCATION:

Purdue University — West Lafayette, IN
Aug. 2006 – Present, PhD in Materials Engineering — Expected Dec. 2009

University of Central Florida — Orlando, FL
Master of Science in Materials Science and Engineering — Aug. 2006

Indian Institute of Technology — Kharagpur, India
Bachelors of Technology in Metallurgical & Materials Engineering, — May 2004

PROJECT WORK:

1. Under Prof. Carol Handwerker, School of Materials Eng, Purdue University. *October 2006 - Present (Research Assistant)*

- Phase transformation and Interphase stability in solder interconnects.

2. Under Dr. Patrick Schelling,Assistant Professor, AMPAC, Univ of Central Florida. *September 2004 - July 2006 (Research Assistant)*

- Electronic structure simulation of Ceria Surface using VASP
- First principle simulation of bulk water using SIESTA.

3. Under Prof. I.Manna & Prof. P.K.Das, IIT Kharagpur
january 2003 - April 2004 (Senior year project)

- Synthesis, Characterization of nanofluid and to Model its Heat Transfer Properties. (This thesis was adjudged as the best thesis in 2004 at undergraduate level.)

4. Summer Internship at Tata Metaliks,Kharagpur
May - June,2003

- Worked on a project titled "*Stabilization and increase in the amount of Silicon in the pig iron*".

Publication:

1. **Santosh Kumar** and P.K. Schelling, "Basis-set optimization for first-principles simulation of liquid water," *Int. J. Quant. Chem.*, **107**, 556 (2007).

2. M. Chopkar, **S. Kumar**, D.R. Bhandari, P.K. Das and I. Manna, "Development and characterization of Al_2Cu and Ag_2Al nanoparticle dispersed water and ethylene glycol based nanofluid" *Materials Science and Engineering: B,* Vol. **139**, Issue 2, 15 May 2007, pp 141-148.

3. **S. Kumar**, K. Kulkarni, C. Handwerker, and M. Dayananda "Diffusion Analysis of Cu-Sn System" Accepted for publication in Materials Science and Technology 2007 Conference and Exhibition proceedings.

4. **Santosh Kumar** and P.K. Schelling, "Density-functional theory study of water adsorption at reduced and stoichiometric ceria (111) surfaces," *The J. Chem. Phy.*, **125**, 204704 (2006).

5. Chopkar, M; **Kumar, S**; Das, P K; Manual, I ; "Nanofluid for Advanced Heat Transfer Applications" *Transactions of the Indian Institute of Metals*, Vol. 57, no. 5, A59, Oct. 2004.

Presentation:

1. Presented a poster in AVS conference, 2004 at Univ. of Central Florida, Orlando,Florida. *Title: Electronic-Structure Simulation of CERIA-WATER Interfaces.*

Skills.

- Characterization Technique: TEM, SEM, XRD
- Atomistic Simulations: Molecular Dynamics, DFT.
- Density Functional Theory tools: SIESTA, VASP.
- High Level Languages: C, Fortran.
- Operating Systems: Linux, Windows, DOS.

Academic Distinctions:

- Got the best Thesis award for my undergraduate thesis at IIT Kharagpur for the Year 2004.