

## Curriculum Vitae

<b>Dr. Angshuman Nag</b> Postdoctoral Scholar, University of Chicago, Chicago, IL 60637,	Tel.: ++1 773-834-4149 E-mail: <a href="mailto:angshuman@uchicago.edu">angshuman@uchicago.edu</a>
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### Education and Research

**7/2010-Present:** Postdoctoral Fellow, University of Chicago, Chicago, IL 60637, USA.  
Mentor: **Prof. Dimtri V. Talapin**

**5/2009 – 6/2010:** Centenary Postdoctoral Fellow, Indian Institute of Science, Bangalore, India  
Mentor: **Prof. C. N. R. Rao**

**1/2004 – 5/2009:** Ph. D., Indian Institute of Science, Bangalore, India  
Thesis Supervisor: **Prof. D. D. Sarma**  
Thesis Title: *Doping and Photophysical Properties of II-VI Semiconductor Nanocrystals.*

**6/2001 – 5/2003:** M. Sc. in Chemistry (Cumulative Performance Index: 8.93 out of 10)  
Indian Institute of Technology, Guwahati, India  
Project Supervisor: Prof. Arun Chattopadhyay  
Project Description: Fabrication of Surface Tension Confined Two Dimensional Microfluidic Device.

**6/1998 – 5/2001:** B. Sc. with Chemistry Major (74.4 %), G. C. College, Assam University, Silchar, Assam, India.

### Research Interests

- Semiconductor nanocrystals: synthesis, doping, surface modification, electronic and optical properties.
- Graphene and Analogues: Synthesis, Properties, Functionalization.
- Oxides: Multiferroic oxide nanocrystals and Transparent Conducting Oxides

### Awards/Fellowship

2008-2009	Toulouse medal from the Indian Institute of Science, the award for the best Ph.D. thesis in the Solid State and Structural Chemistry Unit.
2009	Indian Institute of Science Centenary Postdoctoral Fellowship
2003	Qualified national eligibility test ( CSIR, JRF-SRF) “CSIR-NET-2003”.
2002	Qualified national test “GATE-2002” with 99.56 percentile securing 13 <sup>th</sup> position in the All India Ranking.
2001	1 <sup>st</sup> class 1 <sup>st</sup> Position in B.Sc. Chemistry

## Publications

21. Size-Dependent Tuning of Mn<sup>2+</sup> d-Emission in Mn<sup>2+</sup>-Doped CdS Nanocrystals  
**Angshuman Nag**, Roby Cherian, Priya Mahadevan, Achanta Venu Gopal, Abhijit Hazarika, Akshata Mohan, A. S. Vengurlekar, D. D. Sarma *J. Phys. Chem. C* **2010**, *114*, 18323.
20. Graphene Analogue BCN: Femtosecond Nonlinear Optical Susceptibility and Hot Carrier Dynamics  
Sunil Kumar, N. Kamaraju, K.S. Vasu, **Angshuman Nag**, A.K. Sood, C.N.R. Rao. *Chem. Phys. Lett.* **2010**, *499*, 152.
19. Multiferroic and magnetoelectric properties of core-shell CoFe<sub>2</sub>O<sub>4</sub>@BaTiO<sub>3</sub> nanocomposites  
Kalyan Raidongia, **Angshuman Nag**, A. Sundaresan and C. N. R. Rao. *App. Phys. Lett.* **2010**, *97*, 062904.
18. *Blue-light emitting graphene-based materials and their use in generating white-light*  
K. S. Subrahmanyam, Prashant Kumar, **Angshuman Nag** and C. N. R. Rao. *Solid State Commun.* **2010**, *150*, 1774.
17. *Origin of the enhanced photoluminescence from semiconductor CdSeS nanocrystals*  
D. D. Sarma, **Angshuman Nag**, Pralay K. Santra, Akshay Kumar, Sameer Sapra and Priya Mahadevan. *J. Phys. Chem. Lett.* **2010**, *1*, 2149.
16. “Search for New Transparent Conductors: Effect of Ge Doping on the Conductivity of Ga<sub>2</sub>O<sub>3</sub>, In<sub>2</sub>O<sub>3</sub> and Ga<sub>1.4</sub>In<sub>0.6</sub>O<sub>3</sub>”  
**Angshuman Nag** and Ajmala Shireen. *Solid State Commun.* **2010**, *150*, 1679.
15. “Inorganic analogues of Graphene”  
C. N. R. Rao and **Angshuman Nag**. *Eur. J. Inorg. Chem.* **2010**, 4244.
13. “Graphene Analogue of BN: Novel Synthesis and Properties”  
**Angshuman Nag**, Kalyan Raidongia, K. P. S. S. Hembram, Umesh V Waghmare, Ranjan Datta and C. N. R. Rao. *ACS Nano* **2010**, *4*, 1539.  
(This paper was highlighted in Nature India  
<http://www.nature.com/nindia/2010/100208/full/nindia.2010.11.html#B1>)
12. *BCN: A Graphene Analogue with Remarkable Adsorptive Properties*  
Kalyan Raidongia, **Angshuman Nag**, K. P. S. S. Hembram, Umesh V Waghmare, Ranjan Datta and C. N. R. Rao. *Chem. Eur. J.* **2010**, *16*, 149.
11. *Solvothermal Synthesis of InP Quantum Dots*  
**Angshuman Nag** and D. D. Sarma. *J. Nanosci. Nanotech.* **2009**, *9*, 5633.
10. *To Dope Mn<sup>2+</sup> in a Semiconducting Nanocrystal*  
**Angshuman Nag**, S. Chakraborty and D. D. Sarma. *J. Am. Chem. Soc* **2008**, *130*, 10605.  
(This paper was highlighted in Research Highlight, npg asia materials,

<http://natureasia.com/asia-materials/highlight.php?id=401>.)

9. *Optically Bi-functional Hetero-Structured Nanocrystals*  
**Angshuman Nag**, Akshay Kumar, P. Prem Kiran, S. Chakraborty, G. Ravindra Kumar and D. D. Sarma. *J. Phys. Chem. C* **2008**, *112*, 8229.
8. *Luminescence in Mn Doped CdS Nanocrystals*  
**Angshuman Nag**, Sameer Sapra, Subhra Sen Gupta, Ankita Prakash, Ajit Ghangrekar, N. Periasamy and D. D. Sarma *Bull. Mater. Sci.* **2008**, *31*, 561.
7. *White Light from Mn<sup>2+</sup> - Doped CdS Nanocrystals: A New Approach*  
**Angshuman Nag** and D.D. Sarma. *J. Phys. Chem. C (Lett.)* **2007**, *111*, 13641.  
(This paper was highlighted in several places; some of them are listed below)
  - a. Research Highlights *Nature Nanotechnology* **2007**, doi:10.1038/nnano.2007.324.
  - b. Technology Review published by *MIT*,  
<http://www.technologyreview.com/Nanotech/19426/page1/>
  - c. *American Chemical Society's* Weekly PressPac -- Sept. 19, 2007,  
[http://www.eurekalert.org/pub\\_releases/2007-09/acs-ac091807.php](http://www.eurekalert.org/pub_releases/2007-09/acs-ac091807.php)
  - d. *Photonics Spectra* **2007**,  
<http://www.photonics.com/content/spectra/2007/October/news/89214.aspx>
  - e. Research news, *Materials Today* **2007**, *10*, 17.
  - f. One of the most-accessed articles published by *J. Phys. Chem. C* in 2007,  
<http://pubs.acs.org/journals/promo/most/>.)
6. *A Study of Mn<sup>2+</sup> Doping in CdS Nanocrystals*  
**Angshuman Nag**, Sameer Sapra, C. Nagamani, Ajay Sharma , N. Pradhan, S. V. Bhat and D. D. Sarma. *Chem. Mater.* **2007**, *19*, 3252.
5. *Synthesis of CdSe Nanocrystals in a Noncoordinating Solvent: Effect of Reaction Temperature on Size and Optical Properties*  
**Angshuman Nag**, Sameer Sapra, S. Chakraborty, S. Basu and D. D. Sarma. *J. Nanosci. Nanotech.* **2007**, *7*, 1965.
4. *White-Light Emission from a Blend of CdSeS Nanocrystals of Different Se:S Ratio*  
Moazzam Ali, Soma Chattopadhyay, **Angshuman Nag**, Akshay Kumar, Sameer Sapra, S. Chakraborty and D. D. Sarma. *Nanotechnology* **2007**, *18*, 075401.
3. *Nonlinear Absorption of Ternary and Quaternary Semiconductor Nanocrystals*  
P. P. Kiran, D. More, **Angshuman Nag**, Akshay Kumar, Sameer Sapra, D. D. Sarma, P. Ayyub, G. R.Kumar, *Proceedings of Photonics* 2006, 13 – 16 Dec, Hyderabad, India.
2. *Synthesis and Characterization of Highly Luminescent CdSe and CdSeS Quantum Dots*  
**Angshuman Nag**, Akshay Kumar, Sameer Sapra and D. D. Sarma. *Proceedings of the DAE Solid State Physics Symposium* **2005**, *50*, 249, 5-9 Dec 2005, Mumbai, India.
1. *Performing Chemical Reactions in Virtual Capillary of Surface Tension-Confined*

*Microfluidic Devices.*

**Angshuman Nag**, Biswaranjan Panda and Arun Chattopadhyay. *Pramana* **2005**, 65, 621.

## **References**

<b>Prof. D. D. Sarma</b> FNA, FASc, FNASc, FTWAS Fellow, American Physical Society Solid State and Structural Chemistry Unit Indian Institute of Science Bangalore – 560 012, India E-mail: <a href="mailto:sarma@sscu.iisc.ernet.in">sarma@sscu.iisc.ernet.in</a>	<b>Prof. C. N. R. Rao</b> , F. R. S National Research Professor, Honorary President & Linus Pauling Research Professor Director, ICMS Jawaharal Nehru Centre for Advanced Scientific Research Jakkur, Bangalore-560064, India E-mail: <a href="mailto:cnrrao@jncasr.ac.in">cnrrao@jncasr.ac.in</a>	<b>Prof. Dmitri V. Talapin</b> The University of Chicago, Department of Chemistry, 929 E. 57th St., GCIS E 205, Chicago, IL 60637 Email: <a href="mailto:dvtalapin@uchicago.edu">dvtalapin@uchicago.edu</a>
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