

## Dr. Mukherjee, Sumanta



**PhD Institution and Year :** Indian Institute of Science, Bangalore. Completed in 2014

**Date of Joining IISc :** 04-04-2016

**Area(s) of Research :** Solid State Chemistry, Solid State Physics, Physical Chemistry

**Name of the Post-doctoral Fellowship :**

**Laboratory where currently working :** Prof. D. D. Sarma's Group

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**Topic(s) of Research :** *Electron spectroscopy (XPS, HAXPES, XAS) studies on oxide systems and on heterostructures*

*(Thin Films and Quantum dots) materials, Dielectrics and Magnetism, Self Assembly of colloids and nano materials,.*

### Research Publications in IISc :

1. **S. Mukherjee**, B. Pal, D. Choudhury, I. Sarkar, M. Gorgoi, W. Drube, O. Karis, H. Takagi, J. Matsuno and D. D. Sarma, *Origin and distribution of charge carriers in LaAlO<sub>3</sub>-SrTiO<sub>3</sub> oxide heterostructures in the high carrier density limit*, Phys. Rev. B **93**, 245124, 2016
2. B. Pal, **S. Mukherjee** and D. D. Sarma, *Probing Complex Internal Structures using Hard X-ray Photoelectron Spectroscopy (HAXPES)*, J. Elec. Spec. Rel. Phen. **200**, 332, 2015.

3. **S. Mukherjee**, R. Knut, S. M. Mohseni, T. N. Anh Nguyen, S. Chung, Q. Tuan Le, J. Akerman, J. Persson, A. Sahoo, A. Hazarika, B. Pal, S. Thiess, M. Gorgoi, P. S. Anil Kumar, W. Drube, O. Karis, and D. D. Sarma, *Role of Boron diffusion in CoFeB/MgO magnetic tunnel junctions*, *Phys. Rev. B* **91**, 085311, 2015.
4. S. Ghatak, **S. Mukherjee**, M. Jain., D. D. Sarma, A. Ghosh, *Microscopic origin of low frequency noise in MoS<sub>2</sub> field-effect transistor*, *APL Mat.* **2**, 092515, 2014.
5. P. A. Mangrulkar, A. V. Kotkondawar, **S. Mukherjee**, M. V. Joshi, N. Labhsetwar, D. D. Sarma, S. S. Rayalu *Throwing Light on Platinized Carbon Nanostructured Composite for Hydrogen Generation*, *Energy Environ. Sci.* **7**, 4087, 2014.
6. **S. Mukherjee**, A. Hazarika, P. K. Santra, A. L. Abdelhady, M. Azad Malik, M. Gorgoi, P. O'Brien, O. Karis and D. D. Sarma *Determination of Internal Structures of Heterogeneous Nanocrystals using Variable Energy Photoemission Spectroscopy*, *J. Phys. Chem. C* **118**, 15534, 2014.
7. **S. Mukherjee**, A. Saha, P. K. Santra, S. Sengupta, D. D. Sarma *Beyond the "Coffee Ring": Re-entrant Ordering in an Evaporation-Driven Self-Assembly in a Colloidal Suspension on a Substrate* *J. Phys. Chem. B* **118**(9), 2559, 2014.
8. R. Knut, P. Svedlindh, O. Mryasov, K. Gunnarsson, P. Warnicke, D. Arena, M. Björck, A. Dennison, A. Sahoo, **S. Mukherjee**, D. D. Sarma, S. Granroth, M. Gorgoi, O. Karis *Interface characterization of Co<sub>2</sub>MnGe/Rh<sub>2</sub>CuSn Heusler multilayers*, *Phys. Rev. B* **88**, 134407, 2013.
9. D. K Bora, Y. Hu, S. Thiess, S. Erat, X. Feng, **S. Mukherjee**, G. Fortunato, N. Gaillard, R. Toth, K. Gajda-Schranz, W. Drube, M. Grätzel, J. Guo, J. Zhu, E. C Constable, D. D. Sarma, H. Wang, A. Braun *Between photocatalysis and photosynthesis: Synchrotron Spectroscopy Methods on Molecules and Materials for Solar Hydrogen Generation* *J. Elec. Spec. Rel. Phen.* **190**, 93, 2013.
10. D. D Sarma, P. K. Santra, **S. Mukherjee**, A. Nag X-ray Photoelectron Spectroscopy: *A Unique Tool to Determine the Internal Heterostructure of Nanoparticles* *Chem. Mater.* **25**, 1222, 2013.
11. P. K. Santra, **S. Mukherjee**, D D Sarma *Growth Kinetics of ZnO Nanocrystals in the Presence of a Base: Effect of the Size of the Alkali Cation.* *J. Phys. Chem. C* **114**, 22113, 2010.
12. D. Choudhury, **S. Mukherjee**, P. Mandal, A. Sundaresan, U. Waghmare, S. Bhattacharjee, R. Mathieu, Peter Lazor, O. Eriksson, B. Sanyal, P. Nordblad, A. Sharma, S.V. Bhat, O. Karis, D. D. Sarma *Tuning of dielectric properties and magnetism of SrTiO<sub>3</sub> by site-specific doping of Mn.* *Phys. Rev. B* **84**, 125124, 2011.
13. **S. Mukherjee**, Pralay K. Santra and D. D. Sarma, **Chapter: Depth Profiling and Internal Structure Determination of Low Dimensional Materials Using X-ray Photoelectron Spectroscopy** **Book Title:** Hard x-Ray photoelectron spectroscopy

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**Other accomplishments and recognition while in IISc : -**

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