Sitikantha Dhurjati Das

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Department of Physics
Indian Institute of Technology,
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Education and Research

2018 - Present : Assistant Professor (Grade I) at the Indian Institute of Technology, Kharagpur.

2017 -2018 : Assistant Professor (Tenure Track) at the Indian Institute of Technology, Kharagpur.

2014- 2016 : Post-doctoral researcher at the Correlated Electron Systems Group in the Department of Physics at the University of Bristol.

2009-2014 : Research Scholar at the Quantum Matter Group (Cavendish Labs, University of Cambridge). **[PhD awarded]**

2006-2009 : MSc from Tata Institute of Fundamental Research (TIFR, Mumbai).

2003-2006: BSc from Presidency College, Calcutta University.

2001-2003 : Indian School Certificate exam.

Awards and achievements

- *Science and Engineering Research Board (SERB) ECR Award (Approved 2018)'Understanding the electronic properties of iron based superconductors using pressure and strain effects' [*

- *ISIRD (IIT Kharagpur) (Awarded 2017) 'Investigation of Electronic Properties of 122 Class of pnictide Superconductors with Doping and Pressure'*

- *Fully funded fellowship awarded by the* ***Cambridge Commonwealth Trust (CCT)*** *to study for a PhD at Dept of Physics, University of Cambridge.(2009-2014)*

- *Travel bursary awarded for traveling to Florida and India for collaboration and experiments.(2010-2011)*

- ***Kishore Vaigyanik Pratsahan Yojana (KVPY)*** *awarded by Dept of Science and Technology, Government of India for pursuing career in science.(2001-2006)*

Conferences attended

- ***Superconductivity and superconducting materials***,
  (June 2018), HBCSE (TIFR).

- ***Modern Trends in Chemistry and Physics***,
  (December 2017), Indian Academy of Sciences.
  Title : (1) Introduction to superconductivity (2) A journey from low to high temperature superconductors.

- ***Frontiers in Unconventional Superconductivity, Superfluidity and Magnetism***,
  Poster title : *Numerical studies in Kitaev and Kitaev Heisenberg models*,
  8 January 2016, University of Bristol, Bristol, UK.

- ***20th International Conference on Magnetism (ICM 2015),***
  Poster title : *Quantum Criticality at the Lifshitz point in electron doped Iron Arsenides,* 5th - 10th July, 2015, Barcelona, Spain.

- ***DPG Meeting 2015,***
  Poster title : *Magnetic field and impurity studies in Kitaev and Kitaev Heisenberg models,* 15th - 20th March, 2015, Technical University of Berlin, Germany.

- ***International Conference on Strongly Correlated Electron Systems (SCES 2011),***
  Poster title : *Anisotropic resistivity measurements in parent and Co- doped crystals of* $SrFe_2As_2$, 29th Aug - 3rd Sept, 2011, University of Cambridge, UK.

- ***Electronic structure of Fe based superconductors,***
  Poster title : *Magnetic, Structural, and Superconducting Transitions in* $A(Fe_{1-x}Co_x)_2As_2$ *(A = Sr, Ba) Single Crystals*,
  May 2010, Max-Planck-Institut for Festkorperforschung, Stuttgart, Germany.

List of publications

1. ***Magnetic anisotropy of the alkali iridate*** Na_2IrO_3 ***at high magnetic fields: Evidence for strong ferromagnetic Kitaev correlations,*** **Sitikantha. D. Das**, Sarbajaya Kundu,

Zengwei Zhu, Eundeok Mun, Ross D. McDonald *et. al.***,** *Phys. Rev. B 99, 081101 (R) (2019)*

2. ***Kondo route to spin homogeneities in honeycomb Kitaev model,*** **S. D. Das,** K. Dhochak, V. Tripathi, *Phys. Rev. B 94, 024411 (2016)*

3**.** ***Quantum criticality in the 122 iron pnictide superconductors emerging from orbital-selective Mottness,*** **S. D. Das**, M. S. Laad, L. Craco, J. Gillett, V. Tripathi, and S. E. Sebastian, *Phys. Rev. B 92, 155112 (2015)*

4**.** ***Detection of Orbital Fluctuations Above the Structural Transition Temperature in the Iron-Pnictides and Chalcogenides,*** H. Z. Arham, C. R. Hunt, W. K. Park, J. Gillett, **S. D. Das**, S. E. Sebastian, Z. J. Xu, J. S. Wen, Z. W. Lin, Q. Li, G. Gu, A. Thaler, S. Ran, S. L. Bud'ko, P. C. Canfield, D. Y. Chung, M. G. Kanatzidis, L. H. Greene, *Phys. Rev. B 85, 214515 (2012)*

5. ***Dimensional Tuning of the Magnetic-Structural Transition in*** $A(Fe_{1-x}Co_x)_2As_2$ ***(A=Sr,Ba),*** Jack Gillett, **Sitikantha D. Das**, Paul Syers, Alison K. T. Ming, Jose I. Espeso, Chiara M. Petrone, and Suchitra E. Sebastian, *arxiv:1005.1330v1 (2011)*

6. ***Isothermal magnetic entropy behavior in*** Tb_5Si_3***: Sign reversal and non-monotonic variation with temperature, and implications***, Niharika Mohapatra, **Sitikantha D Das**, K. Mukherjee and E. V. Sampathkumaran, *Solid State Communications 151 (2011) 1340-1343*

7. ***Magnetism of fine particles of Kondo lattices, obtained by high-energy ball-milling***, E V Sampathkumaran, K Mukherjee, Kartik K Iyer, Niharika Mohapatra and **Sitikantha D Das** , *J. Phys.: Condens. Matter 23 094209 (2011)*

8. ***Itinerant Spin Excitations in*** $SrFe_2As_2$ ***Measured by Inelastic Neutron Scattering***, R. A. Ewings, T. G. Perring, J. Gillett**, S. D. Das**, S. E. Sebastian,A. E. Taylor, T. Guidi, and A. T. Boothroyd, *Phys. Rev. B 83 214519 (2011)*

9. ***Anomalous butterfly-shaped magnetoresistance loops in the alloy*** Tb_4LuSi_3, K. Mukherjee, **Sitikantha D. Das**, Niharika Mohapatra, Kartik K. Iyer, and E. V. Sampathkumaran, *Phys. Rev. B 81, 184434 (2010)*

10. ***Influence of pressure on the magnetic behavior and the anomalous magnetoresistance in*** Tb_5Si_3 , Niharika Mohapatra**, Sitikantha D. Das**, K. Mukherjee, Kartik K. Iyer, and E. V. Sampathkumaran, *Phys. Rev. B 80, 214425 (2009)*

11. ***Magnetic behavior of nanocrystalline*** $ErCo_2$, **Sitikantha D Das**, Niharika Mohapatra, Kartik K Iyer, R D Bapat and E V Sampathkumaran, *J. Phys.: Condens. Matter 21 296004 (2009)*

12. ***Magnetic ordering in the fine particles of some bulk Pauli-paramagnets,*** **Sitikantha D. Das**, S. Narayana Jammalamadaka, Kartik K. Iyer, and E. V. Sampathkumaran , *Phys. Rev. B 80, 024401 (2009)*

13. ***Magnetic behavior of nano crystals of a spin-chain system, $Ca_3Co_2O_6$: Absence of multiple steps in the low temperature isothermal magnetization***, Niharika Mohapatra, Kartik K. Iyer, **Sitikantha D. Das**, B. A. Chalke, S. C. Purandare, and E. V. Sampathkumaran, *Phys. Rev. B 79, 140409(R) (2009)*

14. ***Enhancement of positive magnetoresistance following a magnetic-field-induced ferromagnetic transition in an intermetallic compound, Tb_5Si_3,*** S. Narayana Jammalamadaka, Niharika Mohapatra, **Sitikantha D. Das**, and E. V. Sampathkumaran, *Phys. Rev. B 79, 060403(R) (2009)*

15. ***Magnetic anomalies in $Gd_6Co_{1.67}Si_3$ and $Tb_6Co_{1.67}Si_3$,*** S Narayana Jammalamadaka, Niharika Mohapatra, **Sitikantha D Das**, Kartik K Iyer and E V Sampathkumaran, *J. Phys.: Condens. Matter 20 425204 (2008)*

16. ***Magnetic anomalies in $Nd_6Co_{(1.67)}Si_3$: Surprising first order transitions in the low-temperature isothermal magnetization***, Niharika Mohapatra, S. Narayana Jammalamadaka**, Sitikantha D. Das**, and E. V. Sampathkumaran, , *Phys. Rev. B 78, 054442 (2008)*

17**.** ***Magnetic behavior of nanocrystalline $LaMn_2Ge_2$,*** S. Narayana Jammalamadaka, **Sitikantha D. Das**, B. A. Chalke and E.V. Sampathkumaran, *JMMM (2008)*