Jayashree Das, Ph.D.

Designation: Professor

Department: Department of Basic Science and Humanities

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RESEARCH INTERESTS

Experimental condensed matter Physics:
Synthesis and characterisation of ZnO based DMS systems; bulk, filmand nanomaterials. Un-doped and doped Multiferroics (BiFeO3) Materials; (Bulk) and nanoparticles. Colossal Magneto-resistance Materials (Bulk & Thin film by spray Pyrolysis), Nano-structured materials. High Tc Superconductors; Iron pnictides & YBCO,NRF project on ZnO, TiO2, and SnO2 based DMS material in South Africa

Academic Qualifications:

Post- Doc, University of South Africa (UNISA), South Africa
Ph. D. (Physics), Utkal University, India
M. Sc. (Physics) Utkal University, India (Gold Medal)
Specializations: Solid State Physics.

Teaching Experience:

34 years in teaching Engineering Physics, Applied Physics, Modern Physics,Semiconductor devices, Engineering Materials, Electronics Devices

Industrial Experience: Nil

Research Experience:

20 years in the field of DMS, BFO, High Tc Superconductors and nanomaterials

PUBLICATIONS

JOURNAL INTERNATIONAL:

[1] Sreedevi Vallabhapurapu , L. D. Varma Sangani, M. Ghanashyam Krishna, **J. Das** , A. Srinivasan and V. V. Srinivasu, Optical and resistive switching properties of Chitosanaluminum-doped zinc oxide composite thin films for transparent resistive random access memory application, J Mater Sci: Mater Electron (2021) 32:3556–3565

[2] Novel normal-state low field microwave absorption in SmFeAsO1-xFx iron pnictide superconductors, R.B. Onyancha, J. Shimoyam, **J. Das**, H. Ogino, U.O. Aigbe, V.V. Srinivasu, *Solid State Communications* (ELSEVIER) 307 (2020) 113800

[3]. Cr doped ZnO: Investigation of magnetic behaviour through SQUID and ESR Studies, P.E. Amami, **J. Das**, D.K. Mishra, V.V. Srinivasu, D.R. Sahu, B.K. Roul; *Physica B: Condensed Matter* (ELSEVIER) 572 (2019) 60–65

[4]. Low-field microwave absorption in Zn1−x(Mn:Fe(Ni))xO (x = 0.02) system: hysteresis, line shapes and powdering effects, T. S. Mahule, **J. Das**, V. V.Srinivasu, *Applied Physics A* (Springer) (2019) 125:231, https://doi.org/10.1007/s00339-019-2509-9

[5]. Resistive Switching Behaviour in PMMA/Al:ZnO Composite Films, S. Vallabhapurapu, L.D. Varma Sangani, M. Ghanashyam Krishna**, J. Das**, C. Tu, S. Du and A. Srinivasan, *ACTA PHYSICA POLONICA A*, (Institute ofPhysics of the Polish Academy of Sciences) No. 1, Vol. 134 (2018), 68-70

[6]. Low Field Microwave Absorption in Mn:Ni Co-Doped ZnO μm Size Powders, T.S. Mahule, **J. Das**, D.R. Sahu and V.V. Srinivasu, *ACTA PHYSICA POLONICA A*, (Institute of Physics of the Polish Academy of Sciences) No. 1, Vol. 134 (2018), 326-328

[7]. Electron spin resonance studies of Bi1- xScxFeO3 nanoparticulates: Observation of an enhanced spin canting over a large temperature range, S. Titus, S. Balakumar, M. Sakar, **J.Das**, V.V. Srinivasu, Solid State Communications, Elsevier) Vol 268, December 2017, 61-63

[8]. Non-Resonant Microwave Absorption in SmFeAsO0.80F0.20: Line Shape and Structure Evolution with Temperature, R. B. Onyancha, J. Shimoyama, **J. Das**, K. Hayashi, H. Ogino, V. V. Srinivasu, J. Superconductivity and Novel magnetism(Springer), DOI: 10.1007/s10948-017-4074-9.

[9]. Spin canting and Magnetism in Nano-crystalline Zn1-xAlxO, **J.Das**, D.K. Mishra, V.V. Srinivasu, Journal of Alloys and Compounds (Elsevier), 704 (2017) 237-244.

[10]. Non-resonant Microwave Absorption in Nano Nickel Added YBCO Powders: Observation of Multiple Phase Reversals, F. Nemangwele, V. Sankaran, B. K. Roul, **J. Das**, V. V. Srinivasu, J. Superconductivity and Novel

magnetism(Springer), DOI: 10.1007/s10948-016-3902-7, May 2017, Volume 30, Issue 5, 1353–1357

[11]. Electron Spin Resonance Studies of Undoped and Dysprosium Doped Bismuth Ferrite Nanoparticles, S.Titus, V.V Srinivasu, S Balakumar, M. Sakar, **J. Das**, J. Superconductivity and Novel magnetism(Springer), DOI: 10.1007/s10948-016-3778-6, March 2017, Volume 30, Issue 3, 819–823

[12]. Electron spin resonance study of co-doped ZnO system: Spin Canted Magnetism and Sintering effects, T S Mahule, V.V. Srinivasu and **J. Das**, J. Superconductivity and Novel magnetism(Springer), DOI: 10.1007/s10948-016-3676-y, May 2017, Volume 30, Issue 5, 1377–1380

[13]. Observation of Low Field Microwave Absorption in co-doped ZnO System, Tebogo S. Mahule, and Vijaya. V. Srinivasu, **J. Das**, Solid State Communication (Elsevier), 243(2016)60–64

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[16]. Photoluminescence and Raman studies for the confirmation of oxygen vacancies to induce ferromagnetism in Fe doped Mn:ZnO compound, **J. Das**, D.K.Mishra, V.V.Srinivasu, D.R.Sahu, B.K.Roul, Journal of Magnetismand Magnetic Materials (Elsevier), 382(2015)111–116

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[22]. Room temperature multiferroicity in Bi rich Fe deficient Gd doped Bi1.2Gd0.1Fe0.8O3, S. K. Pradhan, **J. Das**, P.P. Rout, S. K. Das, S. Samantray, D. K. Mishra, D. R. Sahu, A. K. Pradhan, K. Zhang, V.V. Srinivasu and B. K. Roul, Journal of Alloys and Compounds (Elsevier), 509, 6 (2011) 2645-2649.

[23]. Micro-Raman and XPS studies of pure ZnO ceramics, **J. Das**, S. K. Pradhan, D. R. Sahu, D. K. Mishra, S. N. Sarangi, B. B. Nayak, S. Verma and B. K. Roul, Physica B (Elsevier) 405 (2010) 2492–2497

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National:

[1]. Ferromagnetism in Rare Earth Co-doped Zinc Manganite system, **J. Das**, S. K. Pradhan, D. R. Sahu, D. K. Mishra, V. V. Srinivasu and B. K. Roul, Orissa journal of Physics 16 (2009) 73-80.

[2]. A Review Perceives to Kondo Effect and RKKY Theorem, D. K. Mishra, **J. Das**, B. K. Roul and D. Kanjilal, Orissa journal of Physics 16 (2009) 319-326.

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Conferences:

[1]. Preparation of Nanometer sized Mn doped Zn based oxide powder for DMS applications, **J. Das**, S. K. Pradhan, S. Samantray, D. R. Sahu, D. K. Mishra, V. V. Srinivasu and B. K. Roul, International Seminar on Nanotechnology and Functional Materials, Jan-2009, published by Sreenidhi Institute of Science and Technology, Hyderabad.

[2]. Enhanced Room Temperature Multiferroicity in Gd Doped BFO, S. K. Pradhan, **J. Das**, S. Samantray , D. R. Sahu, A. K. Pradhan, K. Zhang, R. B. Konda, R. Mundle, V. V. Srinivasu and B. K. Roul, International Seminar on

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[4]. Low cost novel ultrasonic spray pyrolysis technique for synthesis of high temperature multielemental oxide thin films, **J. Das**, D. K. Mishra, A. Dikhit,

S. Verma and B. K. Roul, Versatile and viable route for synthesis of mono and multielemental thin films by spray pyrolysis, CMDAYS 2006, August 2006, 29-31

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[6]. Magnetic properties of bulk polycrystalline and nanocrystalline Zn0.99Ni0.01O, D.K.Mishra, J. Mohapatra and **J. Das**, CMDAYS at BIT, MESRA RANCHI during 29-31 August 2012.

[7]. **Session chair** in 4th BRICS Symposium-2015, UNISA, Johannesburg, RSA

[8]. **Invited talk** at BIT's 4th World Congress on Advanced materials, WCAM-2015, Chongqing, China, May, 2015

[9]. **Poster presentation** at ICC-2015, Bikaner, India, October, 2015

[10]. **Poster presentation** at ICC-2015, Bikaner, India, October, 2015

[11]. **Oral presentation** at ICSM-2016, Fethiye, Turkey, April, 2016

[12]. **Oral presentation** at ICNN-2016, Toronto, Canada, June, 2016.

[13]. **Poster presentation**: on "Electron Spin resonance studies of Bi1-xScxFeO3 nanoparticulates: Observation of an enhanced spin canting over a large temperature range", S. Titus, S. Balakumar, M. Sakar, J. Das and V.V. Srinivasu. (Presented by Ph.D. student S.Titus) got Best poster award at ICMAGMA-17 from 1-3 Feb 2017 at Hyderabad, India.

Journal Reviews:

- NANO,
- Journal of Crystal Growth,
- Materials Science and Engineering B,
- Journal of Alloys and Compounds,
- Journal of Electronic Materials,
- SN Applied Sciences
- Molecular Physics
- Applied Physics A

Student guidance:

Masters - Guided **02** students for completion of Masters as co-supervisor atUniversity of South Africa

Ph. D. - Guided **03** students for completion of Ph.D. as co-supervisor at University of South Africa