Curriculum Vitae

Dr. Manoj Kumar Singh

Designation: Associate Professor

Qualification: PhD (Physics, IIT Bombay); PostDoc (USF, USA)

Specialization: Nanoengineering and nanotechnology, advanced 2D materials, Perovskites, CVD techniques for diamond, epitaxial graphene, Raman Spectroscopy and Mapping, SPM, XPS, MBE-LEED, UHV systems, nano Energy, Energy Storage and Conversion

Experience: 14 Years 6 Months

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(*total publication # 115 (International peer-reviewed journals); citations # 5600; h-index: 36, i10-index: 71; total impact factor # 415*)

Google Scholar: https://scholar.google.com/citations?hl=en&user=YUNQMT4AAAAJ&view_op=list_works

(Sex: Male, Born: 15th Januray 1975, Married, Nationality: Indian, Hometown: Varanasi (UP))

Educational Details

- **Ph.D (Condensed Matter Physics), Indian Institute of Technology Bombay (IIT Bombay)**, Thesis Title: *Transition metal doping of Carbon Nanotubes: Theoretical and Experimental Studies,* **2000-Dec 2004** (Principal supervisor : Prof. P.P. Singh & Prof. D.S. Misra, Department of Physics, IIT Bombay)
- **M.Sc. (Physics), Lucknow University**, Specialization: Electronics, **1996-1998**, Lucknow University, Major Subjects: Quantum Mechanics, Solid State Physics, Electronics, Nuclear Physics, X-Rays, Laser & Opto-Electronics

Professional Experience (Total # 14 Years 6 Months Research/Teaching Experience)

December 30, 2019 – till date	Associate Professor, Department of Physics, SoET, Central University of Haryana (CUH), **India**
October 2018 – November 2019	Associate Professor, Centre for Nano & Material Sciences (CNMS), JAIN (Deemed-to-be University), Bangalore, **India**
October 2006 – September 2018	Researcher (Independent Research Position) University of Aveiro, **Portugal (PT)**
May 2006 – September 2006	Lecturer, BIT- Mesra, Ranchi, Jharkhand, **India**
January 2005 – February 2006	PostDoc Fellow (Fabrication of Nanocrystalline Diamond thin-films by Microwave Plasma CVD for MEMS and Biomedical Applications; NSF-NIRT), NREC, University of South Florida (USF), **USA**

Short Visits for Collaborative Work and Experience in Abroad

a) 09/2001-12/2001; IPCMS, **Strasbourg, France** Project sponsored by the Indo-French Centre for the Promotion of Advanced Research (IFCPAR Project No. 1908-1); working with Dr. F. LeNORMAND

b) 11/2008-01/2009; Física e Ingeniería de Superfícies, ICMM-CSIC, **Madrid, Spain**, Perform UHV STM measurements with Dr. José Angel Martín Gago, staff scientist of the "instituto Ciencia de Materiales de Madrid" and leader of the ESISNA group (www.icmm.csic.es/esisna)

c) 06/2010-07/2010; Centre de Recherche Public Henri Tudor, **Luxembourg** (www.tudor.lu), performed "Melanin and Graphene multi-layer (LBL) nanocomposite film for Electrochemical

Biosensor" with Prof. Vincent BALL

d) 12/04/2011-15/04/2011; Visited **Omicron NanoTechnology, GmbH company, Germany** (www.omicron.de), for the aquisition of MULTIPROBE´S system

e) 12/10/2011-15/11/2011; Visited IMEM-CNR, **Parma, Italy** (http://www.imem.cnr.it) with Prof. Dr. Salvatore Iannotta (Director) regarding EU-project on Graphene for real time sensing device applications

f) 16/10/2011-20/11/2011; Física e Ingeniería de Superfícies, ICMM-CSIC, **Madrid, Spain**, Perform UHV STM measurements on Epitaxial grown Graphene samples with Dr. José Angel Martín Gago (www.icmm.csic.es/esisna)

g) 23/10/2011-02/11/2011; **Kazakh National Technical University**, **Kazakhstan**, Visiting Professor

Academic Achievements

S. No	Name of Award	Awarding Year	Agency
1	Bilateral Indo-Portuguese Project Award (Graphene-Based Flexible, Transparent Electrodes For Organic Light Emitting diodes and Photovoltaics) Between University of Aveiro, and Delhi Technological University, Delhi, India	2015	Funding agency FCT-DST
2	Winning of 2013 FCT Investigador Award Starting Grant (5 years fellowship)	2013	FCT, Ministry of Science and Technology, Gov. of Portugal
3	Project awarded title: "Production of Epitaxial graphene thin film by CVD for electronic device applications" (PTDC/CTM-NAN/121108/2010)	2012	FCT, Ministry of Science and Technology, Portugal
4	Investigador Auxiliar Research Position Awarded by (Cinecia 2007 Program, Ministry of Science and Technology, Portugal)	2007	FCT, Ministry of Science and Technology, Gov. of Portugal

5	FCT, Postdoctoral Fellowship Award	2006	FCT, Ministry of Science and Technology, Gov. of Portugal
6	Junior Research Fellowship, Department of Physics, Indian Institute of Technology Bombay	2000	MHRD, Gov. of India
7	Qualified Graduate Aptitude Test in Engineering (GATE)	1999	GATE, (MHRD), Gov. of India

Research Interests

Nanoengineering and nanotechnology, advanced 2D materials, Perovskites, Band gap opening, van der Waals heterostructures, CVD techniques for diamond, epitaxial graphene, SPM, XPS, MBE-LEED, UHV systems, Raman Spectroscopy and Mapping, nano Energy, Energy Storage and Conversion.

Teaching Interests

- Central University of Haryana: BT PHY 1st Year (BT PHY 115A), Physics Lab (BT PHY 116A)
- Jain (Deemed-to-be University): PhD (Nanotechnology), M.Sc. (Spectroscopy, Quantum Mechanics)
- Indian Institute of Technology (IIT) Bombay: Physics Lab (PH 117), General Physics Lab II (EP 311), Characterization Techniques.

Technical Experience

- Develop photoelectron spectroscopy lab (XPS/UPS-AES, UHV systems) for applied surface science
- Design and Development of Experimental Set-Up (Thermal, Hot Filament and Microwave Chemical Vapor Deposition (CVD) Systems) for Diamond, graphene and other 2D materials
- Physical Vapor Deposition (Sputtering Techniques, Thermal Evaporation, Electron Beam Evaporation, Pulsed Laser Deposition).
- Electron Microscopy (Scanning Electron Microscopy, Transmission Electron Microscopy), Raman spectroscopy and mapping
- Scanning Probe Microscopy (Atomic Force Microscopy, Scanning Tunneling Microscopy), Field-emssion, and four probe electrical-transport measurements.

Research Guidance

[3-Postdoc (completed) + 1-PhD (completed) +3-PhD (ongoing) + 1-Master (completed + 2-Master (ongoing)]

1. 2018-on going, Pratik Shinde (PhD student)
   Jain (Deemed-to-be University), Bangalore
   Co-Supervisor: **Manoj K. Singh**
2. 2013- July, 2017 Dhananjay Kumar Sharma (PhD student)
   Erasmus Mundus Action-2 (Svagata.eu 3 Years Project; Lot11-India)
   Thesis Title: Growth and Characterization of Large Area Epitaxial Graphene and Molybdenum disulphide by Chemical Vapor Deposition (*Thesis submitted on August 1, 2017 and defended on 8th January 2018 in the PhD Program Nanoscience and Nanotechnology*)
   Principal Supervisor's: **Manoj K. Singh** and Andrei Kholkin
3. 2011- July, 2017 Syam Sundar (Postdoctoral Fellow)
   Project title: Heat Transfer and Friction Factor of Carbon Nanotubes (CNTs) Doped with Magnetic Fe3O4 Nanoparticles in a Plain Tube and with Inserts (SFRH/BPD/79104/2011)
   Principal Supervisor: **Manoj K. Singh**
4. 2011-2012 Ranjit Hawaldar (Postdoctoral Fellow)
   Project title: Solution Processed Graphene based Transparent Dye Sensitized Solar Cells (SFRH/BPD/79016/2011)
   Principal Supervisor: **Manoj K. Singh**
5. 2012-2016 Gonzalo Guillermo Otero Irurueta (Postdoctoral Fellow), (SFRH/BPD/90562/2012), Project title: New strategies for functionalize Epitaxial-Graphene: towards a well- controlled Click-Chemistry in 2D
   Principal Supervisor: **Manoj K. Singh**
6. 2012-2015 Neetu Singh (Research Technician)
   Project title: Production of Epitaxial graphene thin film by CVD for electronic device applications, (PTDC/CTM-NAN/121108/2010)
   Principal Supervisor: **Manoj K. Singh**

Research projects, Innovation & Development:

List of Awarded Projects

- Project awarded from FCT, (http://www.fct.pt/index.phtml.en), Ministry of Science and Technology, Portugal (PTDC/CTM-NAN/121108/2010) Production of Epitaxial graphene thin film by CVD for electronic device applications 76,140.00€ (01/05/2012- 31/05/2015) (PI)

- Bilateral Indo-Portuguese Project (Graphene-Based Flexible, Transparent Electrodes For Organic Light Emitting diodes and Photovoltaics) between University of Aveiro, Aveiro Portugal and Delhi Technological University, Delhi, India (from 2015-2017) (PI)
- The research project on Corporate R & D Cooperation entitled "SGH - SMART GREEN HOMES - project no. 7678" (POCI-01-0247-FEDER-007678), financed by the European Regional Development Fund (ERDF) through the Competitiveness and Internationalization Operational Program (POCI) (co-PI)

- FCT, (http://www.fct.pt/index.phtml.en), Ministry of Science and Technology, Portugal (PTDC/EME-MFE/103051/2008) Graphene-Zeolite nanocomposite for hydrogen storage: The role of catalyst in spillover mechanism 105,00.00 € (01/05/2010-01/04/2013) (co-PI)
- INL-Portugal/Spain International Nanotechnology Laboratory Capacitating Program in Nanotechnology, Nanomedicine Therapeutically Applications and Drug Delivery (http://inl.int/about-inl/what-is-inl) 183,240.00€ (01/01/2007-31/12/2010) (co-PI)
- FCT, (http://www.fct.pt/index.phtml.en), Ministry of Science and Technology, Portugal (PTDC/CTM/100468/2008) Structural and chemical characterization at the nanometer scale, 165,000.00€ (01-05-2010- 30-04-2013) (co-PI)
- Project co-financed by the National Strategic Refrence Framework (QREN) under the programme “Mais Centro” and the European Union through the European Reginal Development Fund, "Harvesting the energy of the sun for a sustainable future” (co-PI)

List of Submitted Projects (Year 2017-2018)

S. No	Title of the project	Funding agency	Status
1	*"Development of Large-area Heterostructures based on Atomically Thin Crystals by Plasma Enhanced Thermal Chemical Vapour Deposition for Scalable Ultralight High-Efficiency Solar Cells"* (Proposal ID_6023_finalproposal; Rs. 29559200.00; 24 Dec 2017), under evaluation, (Principal Investigator)	DST NanoMission	Under evaluation

Scientific Events Organization

- Co-organizer and member of the scientific committee of the 5th International Conference on Advanced Nano Materials (ANM2014), 2-4 July 2014, Aveiro, PT.
- Co-organizer and member of the scientific committee of the 3rd International Conference on Advanced Nano Materials (ANM2010), 12-15 September 2010, Agadir, Morocco.
- Co-organizer and member of the scientific committee of the 2nd International Conference on Advanced Nano Materials (ANM2008), 22-25 June 2008, Aveiro, PT.
- Co-organizer and member of the scientific committee of the International Conference on ECAT 2016-2017 (http://ecat-conference.com/committees/), and International Workshop (Surface Analysis by XPS and AFM) July 17-19, 2017, Aveiro, PT.

Participation in Evaluation Juries

- April 2013 – Jury member for the PhD thesis defense of João Nuno Barbosa Rodrigues, entitled "*Extended Stone-Wales defects in graphene"*, Department of Physics and Astronomy of Porto University.

List of publications

(total citation # 5650; *h-index = 36; i10-index = 71; total citations = 415*)

Google Scholar: https://scholar.google.com/citations?hl=en&user=YUNQMT4AAAAJ&view_op=list_works

1. Effectiveness analysis of solar flat plate collector with Al2O3 water nanofluids and with longitudinal strip inserts, L.Syam Sundar, A.Kirubei, V.Punnaiah, Manoj K. Singh, Antonio C.M.Sousa, International Journal of Heat and Mass Transfer 127, 422-419 (2018) (https://doi.org/10.1016/j.ijheatmasstransfer.2018.08.025) ISSN: 0017-9310 Journal No. as per the UGC List # 22877; Pergamon-Elsevier Science Ltd I.F: 3.891

2. Functionalized-Ferroelectric-Coatings-Driven Enhanced Biomineralization and Protein-Conformation on Metallic Implants, Maria Helena V Fernandes, Sebastian Złotnik, Marisa Maltez da Costa, Manoj Kumar Singh, and Paula M. Vilarinho, J. Mater. Chem. B 7, 2177-2189 (2019), DOI: 10.1039/C8TB02777C I.F: 4.776 https://pubs.rsc.org/en/content/articlelanding/2019/tb/c8tb02777c#!divAbstract ISSN: 2050-7518 UGC List # 24550

3. Heat transfer and effectiveness experimentally-based analysis of wire coil with core-rod inserted in Fe3O4/water nanofluid flow in a double pipe U-bend heat exchanger, L.Syam Sundar, Manoj K.Singh, and Antonio C.M.Sousa International Journal of Heat and Mass Transfer 134, 405-435 (2019) (https://doi.org/10.1016/j.ijheatmasstransfer.2019.01.041) ISSN: 0017-9310 Journal No. as per the UGC List # 22877; Pergamon-Elsevier Science Ltd I.F: 3.891

4. Effect of Twisted Tape Inserts on Heat Transfer Friction Factor of Fe3O4 Nanofluids Flow in a Double Pipe U-Bend Heat Exchanger, N.T. Ravi Kumar, P. Bhramar, A. Kirubeil, L. Syam Sundar, MK Singh*, International Communications in Heat and Mass Transfer 95, 53-62 (2018) (https://doi.org/10.1016/j.icheatmasstransfer.2018.03.020) ISSN: 0735-1933; Pergamon-Elsevier Science Ltd I.F: 4.463

5. Turbulent heat transfer and friction factor of nanodiamond-nickel hybrid nanofluids flow in a tube: An experimental study, L. Syam Sundar, MK Singh*, Antonio C.M. Sousa, International Journal of Heat and Mass Transfer (Elsevier) 117, 223–234 (2018) ISSN: 0017-9310 (https://doi.org/10.1016/j.ijheatmasstransfer.2017.09.109); Journal No. as per the UGC List # 22877; Pergamon-Elsevier Science Ltd I.F: 3.891

6. Heat transfer and friction factor of nanodiamond-nickel hybrid nanofluids flow in a tube with longitudinal strip inserts, L. Syam Sundar, M K. Singh*, Antonio C.M. Sousa, International Journal of Heat and Mass Transfer 121, 390–401 (2018) (https://doi.org/10.1016/j.ijheatmasstransfer.2017.12.096) ISSN: 0017-9310; Journal No. as per the UGC List # 22877; Pergamon-Elsevier Science Ltd I.F: 3.891

7. Experimental Investigation of Al2O3/Water Nanofluid on the Effectiveness of Solar Flat-Plate Collectors with and without Twisted Tape Inserts, LS Sundar, MK Singh*, ACM Sousa, Renewable Energy Volume 119, Pages 820-833 (2018) (https://doi.org/10.1016/j.renene.2017.10.056) ISSN: 0960-1481 Journal No. as per the UGC List # 10267; Pergamon-Elsevier Science Ltd I.F: 4.900

(Year 2017)

8. Optimization of post-deposition annealing in Cu2ZnSnS4 thin film solar cells and its impact on device performance, MG Sousa, AF da Cunha, JP Teixeira, JP Leitão, G Otero-Irurueta, MK Singh, Solar Energy Materials and Solar Cells 170, 287-294 (2017) (https://doi.org/10.1016/j.solmat.2017.05.065) ISSN: 0927-0248 Journal No. as per the UGC List # 33284; Elsevier Science Bv I.F: 5.018

9. Charge injection in large area multilayer graphene by ambient Kelvin probe force microscopy, I Bdikin, DK Sharma, G Otero-Irurueta, MJ Hortigüela, PK Tyagi, V Neto, MK Singh*, Applied Materials Today 8, 18-25 (2017) (https://doi.org/10.1016/j.apmt.2016.11.005) ISSN: 2352-9407
Journal No. as per the UGC List # 15907 Elsevier Science Bv CiteScore: 9.90

10. Effect of samarium and vanadium co-doping on structure, ferroelectric and photocatalytic properties of bismuth titanate, E. Venkata Ramana, N. V. Prasad, David Maria Tobaldi, M. K. Singh, M. P. Seabra, G. Prasad and M. A. Valente, RSC Adv., 2017, 7, 9680–9692 (2017) (https://doi.org/10.1039/c7ra00021a) ISSN: 2046-2069 Journal No. as per the UGC List # 23625 Royal Soc Chemistry I.F: 2.936

11. Filled-carbon nanotubes: 1 D nanomagnets possessing uniaxial magnetization axis and reversal magnetization switching, R Kumari, A Singh, BS Yadav, DR Mohapatra, A Ghosh, P Guha, MK Singh, PK Tyagi, CARBON 119, 464-475 (2017) (https://doi.org/10.1016/j.carbon.2017.04.053) ISSN: 0008-6223 Journal No. as per the UGC List # 5037 Pergamon-Elsevier Science Ltd I.F: 7.28

12. Heat transfer, friction factor and effectiveness of Fe 3 O 4 nanofluid flow in an inner tube of double pipe U-bend heat exchanger with and without longitudinal strip inserts, NTR Kumar, P

Bhramara, LS Sundar, MK Singh*, ACM Sousa, Experimental Thermal and Fluid Science 85, 331-343(2017) (https://doi.org/10.1016/j.expthermflusci.2017.03.019) ISSN: 0894-1777 Journal No. as per the UGC List # 29111 Elsevier Science Inc I.F: 3.204

13. Experimental heat transfer, friction factor and effectiveness analysis of Fe 3 O 4 nanofluid flow in a horizontal plain tube with return bend and wire coil inserts, LS Sundar, P Bhramara, NTR Kumar, MK Singh*, ACM Sousa, International Journal of Heat and Mass Transfer 109, 440-453 (2017) (https://doi.org/10.1016/j.ijheatmasstransfer.2017.02.022) ISSN: 0017-9310 Journal No. as per the UGC List # 22877 Pergamon-Elsevier Science Ltd I.F: 3.891

14. Experimental investigation of the thermal transport properties of graphene oxide/Co 3 O 4 hybrid nanofluids, LS Sundar, MK Singh*, MC Ferro, ACM Sousa, International Communications in Heat and Mass Transfer 84, 1-10 (2017) (https://doi.org/10.1016/j.icheatmasstransfer.2017.03.001) ISSN: 0735-1933 Journal No. as per the UGC List # 2281 Pergamon-Elsevier Science Ltd I.F: 4.463

15. Defect concentration in nitrogen-doped graphene grown on Cu substrate: A thickness effect, DK Sharma, S Fateixa, MJ Hortigüela, R Vidyasagar, G Otero-Irurueta, MK Singh, Physica B: Condensed Matter 513, 62-68 (2017) (https://doi.org/10.1016/j.physb.2017.03.004) ISSN: 0921-4526 Journal No. as per the UGC List # 30753 Elsevier Bv I.F: 1.453

16. Purely Visible-Light-Induced Photochromism in Ag–TiO2 Nanoheterostructures, DM Tobaldi, MJ Hortigüela Gallo, G Otero-Irurueta, MK Singh, RC Pullar, Langmuir 33 (20), 4890-4902 (2017) (https://doi.org/10.1021/acs.langmuir.6b04474) ISSN: 0743-7463 Journal No. as per the UGC List # 4326 American Chemical Society I.F: 3.789

17. Biocompatibility and biotoxicity of in-situ synthesized carboxylatednanodiamond-cobalt oxide nanocomposite, LS Sundar, NA Anjum, MC Ferro, E Pereira, MK Singh*, ACM Sousa, Journal of Materials Science & Technology, Volume 33, Issue 8, 879-888 (2017) (https://doi.org/10.1016/j.jmst.2017.03.016) ISSN: 1005-0302 Journal No. as per the UGC List # 24462 Allerton Press Inc. I.F: 3.609

18. Heat transfer, friction factor and effectiveness analysis of Fe 3 O 4/water nanofluid flow in a double pipe heat exchanger with return bend, NTR Kumar, P Bhramara, BM Addis, LS Sundar, MK Singh*, ACM Sousa, International Communications in Heat and Mass Transfer 81, 155-163 (2017) (https://doi.org/10.1016/j.icheatmasstransfer.2016.12.019) ISSN: 0735-1933 Journal No. as per the UGC List # 2281 Pergamon-Elsevier Science Ltd I.F: 4.463

19. Hybrid nanofluids preparation, thermal properties, heat transfer and friction factor–A review, LS Sundar, KV Sharma, MK Singh*, ACM Sousa, Renewable and Sustainable Energy Reviews 68, 185-198 (2017) (https://doi.org/10.1016/j.rser.2016.09.108) ISSN: 1364-0321 Journal No. as per the UGC List # 10266 Elsevier Bv I.F: 9.184

(Year 2016)

20. Experimental thermal conductivity and viscosity of nanodiamond-based propylene glycol and water mixtures, LS Sundar, MK Singh*, ACM Sousa, Diamond and Related Materials 69, 49-60 (2016) (https://doi.org/10.1016/j.diamond.2016.07.007) ISSN: 0925-9635 as per the UGC List # 13134 Elsevier Science Sa I.F: 2.232

21. Nanographene Oxide Functionalization with Organic and Hybrid Organic–Inorganic Polymers by Molecular Layer Deposition, A Jaggernauth, RM Silva, MA Neto, MJ Hortigüela, G Gonçalves, MK Singh et al., The Journal of Physical Chemistry C 120 (42), 24176-24186 (2016) (http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.6b07909) ISSN: 1932-7447 Journal No. as per the UGC List #19195 American Chemical Society I.F: 4.484

22. Heat transfer and friction factor of multi-walled carbon nanotubes–Fe 3 O 4 nanocomposite nanofluids flow in a tube with/without longitudinal strip inserts, LS Sundar, G Otero-Irurueta, MK Singh*, ACM Sousa, International Journal of Heat and Mass Transfer 100, 691-703 (2016)(https://doi.org/10.1016/j.ijheatmasstransfer.2016.04.065) ISSN: 0017-9310 Journal No. as per the UGC List # 22877 Pergamon-Elsevier Science Ltd I.F: 3.891

23. Effects of additives on kinetics, morphologies and lead-sensing property of electrodeposited bismuth films, AR Rajamani, S Jothi, MD Kumar, S Srikaanth, MK Singh, The Journal of Physical Chemistry C 120 (39), 22398-22406 (2016) (http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.6b06924) ISSN: 1932-7447 Journal No. as per the UGC List # 19195 American Chemical Society I.F: 4.484

24. Thermal conductivity and viscosity of water based nanodiamond (ND) nanofluids: An experimental study, LS Sundar, MJ Hortiguela, MK Singh*, ACM Sousa, International Communications in Heat and Mass Transfer 76, 245-255 (2016) (https://doi.org/10.1016/j.icheatmasstransfer.2016.05.025) ISSN: 0017-9310 Journal No. as per the UGC List # 2281 Pergamon-Elsevier Science Ltd I.F: 4.463

25. Crystal structure, phase stoichiometry and chemical environment of Mg x Nb y O x+ y nanoparticles and their impact on hydrogen storage in MgH 2, D Pukazhselvan, G Otero-Irurueta, J

Pérez, B Singh, I Bdikin, MK Singh, International journal of hydrogen energy 41 (27), 11709-11715 (2016)(https://doi.org/10.1016/j.ijhydene.2016.04.029) ISSN: 0360-3199 Journal No. as per the UGC List # 22910 Pergamon-Elsevier Science Ltd I.F: 4.229

26. Exclusive Endothermic Oxidation of Fe3C-Filled Multi-Walled Carbon Nanotubes, L Krishnia, V Kumar, R Kumari, P Garg, BS Yadav, A Rath, A Ghosh, MK Singh, PK Tyagi, Advanced Science, Engineering and Medicine 8 (6), 460-467 (2016)(https://doi.org/10.1166/asem.2016.1876) ISSN: 2164-6627 Journal No. as per the UGC List # 11660 American Scientific Publishers I.F: 0.9

27. Nanodiamond-Fe 3 O 4 nanofluids: preparation and measurement of viscosity, electrical and thermal conductivities, LS Sundar, EV Ramana, MPF Graça, MK Singh*, ACM Sousa, International Communications in Heat and Mass Transfer 73, 62-74 (2016)(https://doi.org/10.1016/j.icheatmasstransfer.2016.02.013) ISSN: 0017-9310 Journal No. as per the UGC List # 2281 Pergamon-Elsevier Science Ltd I.F: 4.463

28. Thermal conductivity and viscosity of hybrid nanfluids prepared with magnetic nanodiamond-cobalt oxide (ND-Co 3 O 4) nanocomposite, LS Sundar, GO Irurueta, EV Ramana, MK Singh*, ACM Sousa, Case Studies in Thermal Engineering 7, 66-77 (2016)(https://doi.org/10.1016/j.csite.2016.03.001) ISSN: 2214-157X Journal No. as per the UGC List # 5145 Elsevier Bv CiteScore: 3.26

29. Enhanced thermal properties of nanodiamond nanofluids, LS Sundar, MK Singh*, ACM Sousa, Chemical Physics Letters 644, 99-110 (2016)(https://doi.org/10.1016/j.cplett.2015.11.028) ISSN: 0009-2614 Journal No. as per the UGC List # 5475 Elsevier Bv I.F: 1.686

30. Electrostatic self-assembled graphene oxide-collagen scaffolds towards a three-dimensional microenvironment for biomimetic applications, AF Girão, G Gonçalves, KS Bhangra, JB Phillips, J Knowles, G Irurueta, MK Singh, Paula AAP Marques, RSC Advances 6 (54), 49039-49051 (2016) (doi:10.1039/C6RA10213A) ISSN: 2046-2069 Journal No. as per the UGC List # 23625 Royal Soc Chemistry I.F: 2.936

(Year 2015)

31. Heat Transfer and Friction Factor of Al2O3 Nanofluid Flow in a Double Pipe U-Tube Heat Exchanger and with Longitudinal Strip Inserts: An Experimental Study, PV Prasad, A Gupta, LS Sundar, MK Singh*, A Sousa, Journal of Nanofluids 4 (3), 293-301 (2015)

(https://doi.org/10.1166/jon.2015.1161) ISSN: 2169-432X Journal No. as per the UGC List 48725 American scientific publishars I.F: 0.9

32. Heat transfer enhancement of low volume concentration of carbon nanotube-Fe3O4/water hybrid nanofluids in a tube with twisted tape inserts under turbulent flow, LS Sundar, ACM Sousa, MK Singh*, Journal of Thermal Science and Engineering Applications 7 (2), 021015 (2015) (doi: 10.1115/1.4029622) ISSN: 19485085 Journal No. as per the UGC List 11385 ASME I.F: 0.993

33. Experimental study of heat transfer and friction factor of Al 2 O 3 nanofluid in U-tube heat exchanger with helical tape inserts, PVD Prasad, A Gupta, M Sreeramulu, LS Sundar, MK Singh*, ACM Sousa, Experimental thermal and fluid science 62, 141-150 (2015) (https://doi.org/10.1016/j.expthermflusci.2014.12.006) ISSN: 0894-1777 Journal No. as per the UGC List 2911 Elsevier Science Inc I.F: 3.204

34. Magnetic Field Induced Enhancement in Thermal Conductivity and Viscosity of Stabilized Vacuum Pump Oil (VPO)—Fe3O4 Magnetic Nanofluids, LS Sundar, EV Ramana, MK Singh*, A Sousa, Journal of Nanofluids 4 (1), 7-15 (2015) (https://doi.org/10.1166/jon.2015.1124) ISSN: 2169-432X I.F: 0.90

35. Quantitative XRD characterisation and gas-phase photocatalytic activity testing for visible-light (indoor applications) of KRONOClean 7000®, DM Tobaldi, MP Seabra, G Otero-Irurueta, YR de Miguel, RJ Ball, MK Singh, RSC Advances 5 (124), 102911-102918 (2015) (doi: 10.1039/C5RA22816F) ISSN: 2046-2069 I.F: 2.936

36. Nitrogen-modified nano-titania: True phase composition, microstructure and visible-light induced photocatalytic NO x abatement, DM Tobaldi, RC Pullar, AF Gualtieri, G Otero-Irurueta, MK Singh, MP Seabra, JA Labrincha, Journal of Solid State Chemistry, 231, 87-100 (2015) (https://doi.org/10.1016/j.jssc.2015.08.008) ISSN: 0022-4596 I.F: 2.130

(Year 2014)

37. Electrical conductivity enhancement of nanodiamond–nickel (ND–Ni) nanocomposite based magnetic nanofluids, LS Sundar, K Shusmitha, MK Singh*, ACM Sousa, International Communications in Heat and Mass Transfer 57, 1-7 (2014) (https://doi.org/10.1016/j.icheatmasstransfer.2014.07.003) ISSN: 0735-1933 I.F: 4.463

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Patents Awarded

1. International United States Patent (Patent No.: US 8,404,313 B1; Date of Patent Awarded: Mar. 26, 2013; Synthesis of Nanocrystalline Diamond Fibers)

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Book Chapters

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8. Manoj Kumar Singh (2018), "Recent Developments in Graphene-Based Two-Dimensional Heterostructures for Sensing Applications" to be published by Elsevier in the Book title: Fundamentals and Sensing Applications of 2D Materials, (published)
9. Manoj Kumar Singh (2018), "Advancement in Latent heat storage materials", to be published by Apple Academic Press, USA, exclusively distributed worldwide by CRC Press (Taylor and Francis Group, USA). in the book title: Latent Heat based Thermal Energy Storage Systems: Materials, Applications and their Market, (published)

Invited Talks in International Meetings/Conferences

1. Invited talk in BIT´ 2nd World Congress of Industrial Biotechnology-2009 (http://www.bitibio.com/program.asp/)
2. Invited talk in first international conference on Nanomaterials and Nanocomposites (ICNM-2009); http://www.polymer.in/icnm2009/index.html
3. Oral presentation in 2008 7th International Vacuum Electron Sources Conference (IVESC) at Queen Mary, University of London
4. Two Oral presentation in 1st Nano Today Conference (August 2-5, 2009) in Biopolis, Singapore
5. Invited Oral presentation in Advanced Nanomaterials and Nanotechnology (Dec. 9-11, ICANN-2009), IIT-Guwahati, India
6. Invited talk in International conference on Carbon Nanotechnology: Potentail and Challenges, IIT Kanpur (15-17 Dec) 2010.
7. Invited talk in International Conference on Nanomaterials and Nanotechnology NANO-2010, Organized by Center for Nanoscience and Nanotechnology, Thiruchengode, India.

8. Invited as Visitor to present at SEMICON Europa 2015, Dresden, Germany

Publications in scientific conference papers/proceedings

1. "Nanocrystalline diamond coated on a-SiO2 fiber: a new class of hybrid material", Manoj K. Singh*, E Titus, G Cabral, JC Madaleno and J Gracio, 18th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides 9-14 September (2007), Berlin, Germany

2. "Microstructure and Electron Field Emission Study of Diamond Nanorod decorated a-SiO2 Nanowires by Microwave Ar-CH4/H2 Plasma Chemical Vapour Deposition with addition of N2", Manoj Singh*, Titus Elby, Jose Gracio 19th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides 7-11 September (2008), Meliá Sitges Hotel, Sitges, Spain (Accepted for publication)

3. "Role of Temperature Gradient across the substrate in the growth of (100) oriented on Si (100)", E.Titus, Manoj K. Singh and D.S.Misra, proceedings of sixth applied diamond conference / second frontier carbon technology joint conference (ADC/FCT '01), Auburn University, Alabama, USA, August 6-10, 2001

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