Curriculum Vitae:

Dr. Shubra Singh
Crystal Growth Centre
Anna University
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D.O.B: 13.11.1979

Professional experience

UGC-Assistant Professor: Crystal Growth Centre, Anna University, Chennai, Jan 2016-present

DST-INSPIRE Faculty: Crystal Growth Centre, Anna University, Chennai, Aug 2012-Dec 2016

Assistant Prof. : Materials Science Centre, IIT Kharagpur (Jan' 2012-Aug'2012)

Senior Project Officer : BHEL Consultancy Project**,** IIT Madras (May' 2011-Jan' 2012)

CEFIPRA Post Doc. Fellow : UMR 6226 CNRS, University of Rennes 1, France (Sep'2009–Dec'2010) - Prof. Werner Paulus group

Project Fellow (JRF) : Energy Research Unit, Indian Association for Cultivation of Science, Kolkata (2004) - Prof. Swati Ray's group

Visiting Lecturer : Colleges affiliated to Calcutta University (2004)

Education

Ph.D. Degree : Indian Institute of Technology, Madras (2009), Best Thesis
MSc. Degree : Calcutta University (2003), First Class
BSc. Degree : Calcutta University (2001), First Class

Total International publications in refereed journals> 59
Total conference publications: > 45
Teaching and Post doctoral experience: 10 years

Past and Current Research Activities

Functional materials; Brownmillerites; Materials for energy applications

- Mixed conducting oxygen deficient compounds for various applications including cathode for SOFCs, photocatalysis, CO_2 capture etc
- Photoactive materials; Oxynitrides and sulfides for photocatalytic applications
- Thin films, heterostructures, nanomaterials
- Single crystal growth by hydrothermal techniques

Awards/honours/Fellow details and other recognitions received

(i) **INSA Visiting Scientist Fellowship Award**, 2017-2018, by INSA

(ii) **American Ceramic Society appreciation for Reviewer**, 2017

(iii) **Young Female Scientist Award** in the third international conference on "Nanotechnology for Better Living, NBL 2016 at Srinagar, 25-28 Nov 2016.

(iv) **UGC-FRP award 2015**

(v) **Best Poster Award National Symposium Crystal Growth & Epitaxy, Chennai, 2016**

(vi) **Best Poster Award ISSMD3, Chennai, Feb 2-5,2015**

(vii) **Fast Track Young Scientist** (DST) **2014**

(viii) **Travel Grant for Young scientists (below 35 years) under International Travel Support Scheme (ITS)** by SERB to attend MRS Spring Meeting at SAN Francisco, California, 2014.

(ix) **Visiting Faculty Fellowship (2014-2015) from JNCASR, Bangalore, India.**

(x) **DST-INSPIRE** Faculty Award **2012**

(xi) **Prof. Lashkar Best Thesis Award** in PhD (Department of Physics) in July 2009 at Indian Institute of Technology Madras (IITM), India

(xii) **CEFIPRA Post doctorate Fellow** by Indo-French Centre for the Promotion of Advanced Research (IFCPAR), New Delhi, India, 2009.

(xiii) ISRS **best paper award** at the International symposium for Research Scholars (ISRS 2008), Dec-2008, IIT Madras, India

(xiv) **All India rank of 40** in the **GATE** examinations in 2004 with **98.47** percentile conducted nationwide, granted by Indian Institute of Technologies, India

(xv) Award of **Lectureship NET** (National Eligibility Test) in Physical Sciences by Joint CSIR-UGC (2003)

(xvi) Calcutta University Ranker in M.Sc. (2003)

(xvii) Research work appeared on the **cover page of J. Phys. D: Applied Physics** (International refereed journal), 21st October 2007

(xviii) Journal paper appeared as the **most downloaded paper** in the years 2007-2010 among IOP (Institute of Physics) journals

(xix) Research Councilor from Department of Physics, IIT Madras for the period 2006-2007.

(xx) ISRS **best paper award** at the International symposium for Research Scholars (ISRS 2014), IIT Madras, India

Academic activities*:*

a. Teaching: (undergraduate & doctorate Research scholars) Courses taught - Physics of Materials, Engineering Physics, Advances in Crystal growth and characterization, First year B.Tech Lab.
b. Faculty Advisor to First year students (June-Dec. 2014)
c. Participated in Faculty Development programme 2016.
d. Organized UGC XII Plan short term course, Jan. 2017
e. Chief superintendent of examination for Crystal Growth Centre April/May 2017
f. Research Group Participated in the Basic Science Exhibition at Stella Marris College 9-12 February 2017
g. Chaired the session at IWAN 2017, Centre for Nanoscience and Technology, Anna University, Chennai
h. Chaired the session at NANOMEET 2017, National Centre for Nanoscience and Nanotechnology, University of Madras, Chennai
i. Invited Talk at iCOLD Conference on Laser Deposition, IIT Madras 20-22 Nov. 2017
j. Doctoral committee member/ Purchase committee member/Anti Ragging committee
k. Invited talk at Science city 23.01.2019, "Principles and Applications of Nanoscience and Nanotechnology" from the 23rd to 25th January, 2019 at the Science City Auditorium
l. Delivered talk in FDP programme on 01.02.2019
m. Invited talk at VIT, Chennai 8th March 2019
n. DSEHC Workshop on 5th March 2019 at IIT Madras
o. Refresher course, 2018
p. Co-Organizer, GIAN, Dec 2018
q. Co-ordinator, International workshop on crystalline Materials and Applications (IWCMA 2019), 03 Jan – 05 Jan 2019

Details of publications / conference papers presented, listing chronologically:

Refereed International Journal Publications and Book chapters

[1]. Durga Sankar Vavilapalli, Ambrose A. Melvin, S. Kavita, A.K. Yadav, S.N. Jha, D. Bhattacharyya, Saurav Ch. Sarma, Sebastian C. Petere, M.S. Ramachandra Rao, **Shubra Singh,** Multifunctional brownmillerite $KBiFe_2O_5$: Structural, magento-dielectric, optical,

photoelectrochemical studies and enhanced photocatalytic activity over perovskite $BiFeO_3$**, Solar Energy Materials and Solar Cells** 200 (2019) 109940

[2]. R. Janani, Sumithra Sivadas Menon, Gopalkrishna Bhalerao, Bhavana Gupta, **Shubra Singh**, $Zn_{1-x}Ga_xO_{1-y}N_y$– Graphene oxide nanocomposite–for enhanced visible Light photocatalytic activity, **Dyes and Pigments** 165 (2019) 249–255

[3]. Sumithra Sivadas Menon, Hafeez Yusuf Hafeez, Bhavana Gupta, K. Baskar, Gopal Bhalerao, Shamima Hussain, Bernaurdshaw Neppolian, **Shubra Singh ZnO**:InN oxynitride: Anovel and unconventional photocatalyst for efficient UV-visible light driven Hydrogen evolution from Water, **Renewable energy** 141 (2019) 760-769

[4]. Durga Sankar Vavilapalli, Srikanti, K, Ramanjaneyulu M, Brajesh Tiwari; K Mohan Kant, M. S. R. Rao, **Shubra Singh**, Photoactive Brownmillerite Multiferroic KBiFe2O5 and Its Potential Application in Sunlight-Driven Photocatalysis. ***ACS Omega 2018, 3 (12), 16643-16650***

[5]. Anitha R., Ramesh R., Loganathan R., Durga Sankar Vavilapalli, K. Baskar, Shubra Singh, Large area ultraviolet photodetector on surface modified Si:GaN layers, **Applied Surface Science,** 435 (2018) 1057–1064

[6]. Hybrid gallium nitride/organic heterojunction with improved electrical properties for optoelectronic applications, R. Anitha , Durga Sankar Vavilapalli, Sumithra Sivadas Menon, S. Surender, K. Baskar, and Shubra Singh, **Journal of Materials Science, Elec. Mat** (2018) 53, 11553–11561

[7]. Sumithra Sivadas Menon, Gopal Bhalerao, Bhavana Gupta, K. Baskar, Shubra Singh, Development of Zn1-x-yGaxCoyO1-zNz as a non-oxide semiconductor material with visible light photoelectrochemical activity, **Vacuum** 154 (2018) 296–301

[8]. Surender, S. Pradeep, K. Prabakaran, Sumithra Sivadas Menon, I. Davis Jacob, Shubra Singh, K. Baskar, Passivation of Yellow Luminescence of MOCVD Grown InGaN/GaN Heterostructures by Nitrogen Ion Implantation, **Nuclear Inst. and Methods in Physics Research, B** (2018-In Press)

[9]. Growth and comparison of single crystals and polycrystalline brownmillerite $Ca_2Fe_2O_5$, Suchita Dhankhar, Gopal Bhalerao, S. Ganesamoorthy, K. Baskar, **Shubra Singh, Journal of Crystal Growth,** 468, 311-315 (2017)

[10]. Electrochemical performance of brownmillerite calcium ferrite for application as supercapacitor Suchita Dhankhar, Sumithra Sivadas Menon, Bhavana Gupta, K Baskar and

Shubra Singh , **AIP conference proceedings** 1832, 080050 (2017)

[11]. Comparative study on Ga1-xZnxN1-yO_y oxynitride synthesized by different techniques and its application in photocatalytic hydrogen production, Sumithra Sivadas Menon, K. Baskar, **Shubra Singh**, **Journal of Crystal Growth,** Volume 468, p. 139-143 (2017)

[12]. Effect of low Cobalt doping on morphology and properties of calcium ferrite and its application as cathode in Solid oxide Fuel cell, Suchita Dhankhar; Pankaj Tiwari; K Baskar; Suddhasatwa Basu**; Shubra Singh**, **Current Applied. Physics,** 2017**,** 17, 467-473 (In Press)

[13]. Durga Sankar Vavilapalli, **Shubra Singh** Optical Properties of Fe Based Perovskite and Oxygen Deficient Perovskite Compounds: A comparison, ***The Physics of Semiconductor Devices Springer proceedings in physics 215, Chapter 70, 447, 2017 (ISBN-10: 3319976036)***

[14]. S. Surender, S. Pradeep, K. Prabakaran, Shubra Singh, R. Ramesh, K. Baskar, Effect of Silicon doping in InGaN/GaN Heterostructures Grown by MOCVD, **AIP Proceedings** (2017)

[15]. Effect of varying Ga content in ZnO:GaN solid solution synthesized by solution combustion technique for photocatalytic applications Sumithra Sivadas Menon, R. Janani, K. Baskar, Bhavana Gupta, and Shubra Singh, AIP Conference Proceedings 1832, 050089 (2017); doi: 10.1063/1.4980322

[16]. Self-Catalytic Growth of AlN microrods on sapphire substrate, B. Kuppulingam, **Shubra Singh** and K. Baskar, **Journal of Crystal Growth,** 468 (2017) 856–861

[17]. Effect of Growth Temperature on InGaN/GaN Heterostructures Grown by MOCVD, S. Surender , K. Prabakaran , R. Loganathan , S. Pradeep , Shubra Singh , K. Baskar, Journal of Crystal Growth 2017 (In press)

[18]. Blue-Green-Red Emission from InGaN/GaN Heterostructures Grown by MOCVD, K. Prabakaran, R. Ramesh, M. Jayasakthi, R. Loganathan, S. Surender, S. Pradeep, Shubra Singh, K. Baskar, **Materials today proceedings**, Article in Press (2016)

[19]. Direct and Facile Room-Temperature Synthesis of Nanocrystalline Calcium Sulfate Dihydrate (Gypsum) Kapil Gupta, Shubra Singh, and M. S. R. Rao, Cryst. Growth and Design 2016, 16, 3256−3261 (Impact Factor-4.6)

[20]. Anomalous red emission with competition and coexistence of defect and band edge emission in photo-electrochemically active (Zn0.97Ga0.03)(O0.95N0.05) solid solution, Sumithra Sivadas Menon, Bhavana Gupta, Sayantani Sen, Brajesh Tiwari, K. Baskar, Pallabi

Pramanik, Anirban Bhattacharyya and **Shubra Singh, RSC Adv**., RSC Adv.,2016,6, 103081

[21]. Growth behavior of GaN nanowires on c-plane sapphire substrate by applying various catalysts,B. Kuppulingam, G. M. Bhalerao, **Shubra Singh**, K. Baskar, **Appl. Phys. A** (2016) 122:667

[22]. Large Area Transparent ZnO Photodetectors with Au Wire Network Electrodes, Kiruthika Shanmugam, **Shubra Singh** and G U Kulkarni, **RSC Advances**,**6**, 44668-44672 (2016) DOI: 10.1039/C6RA07118J (Impact Factor-3.8)

[23]. Structural, morphology and optical properties of nanocrystalline GaN and AlGaN alloys prepared by EDTA complex route B. Kuppulingam, S.E. Al Garni, **S. Singh**, K. Baskar, **Materials Research Bulletin** 77 (2016) 228–235. (Impact Factor-2.435)

[24]. Sumithra Sivadas Menon, R. Anitha, Bhavana Gupta, K. Baskar, Shubra Singh, Synthesis Of GaN:ZnO Solid Solution by Solution Combustion Method And Characterization For Photocatalytic Application, **AIP Proceedings** 1731, 050025 (2016); doi: 10.1063/1.4947679

[25]. Suchita Dhankhar; Gopal Bhalerao; K Baskar; **Shubra Singh**, Synthesis and Characterization of Polycrystalline Brownmillerite Co doped $Ca_2Fe_2O_5$, **AIP Proceedings** (accepted)

[26]. Suchita Dhankhar, Kapil Gupta, Gopal Bhalerao, Neeraj Shukla, Maneesh Chandran, Bellarmine Francis, Brajesh Tiwari, K. Baskar and **Shubra Singh**, Anomalous Room Temperature Magnetoresistance in Brownmillerite $Ca_2Fe_2O_5$, **RSC Advances**, 2015,5,92549 (Impact Factor-3.8) (2015)

[27]. Sumithra Sivadas Menon, B. Kuppulingam, T.N. Sairam, T.R. Ravindran, Bhavana Gupta, **Shubra Singh**, Realization of high photocatalytic hydrogen generation activity by nanostructured $Ga_{1-x}Zn_xO_{1-z}N_z$ solid-solution without co-catalyst, **International Journal of Hydrogen Energy** 40 (2015) 40 (Impact Factor-3.3)

[28]. Kapil Gupta, **Shubra Singh**, M.S. R. Rao, Fast, reversible CO_2 capture in nanostructured Brownmillerite $CaFeO_{2.5}$, **Nano Energy** (2015) 11, 146–153 **[A Rapid Communication article]** Impact factor (11.21)

[29]. Serena Corallini, Monica Ceretti, Gilles Silly, Andrea Piovano, **Shubra Singh**, Josef Stern, Clemens Ritter, Jinjun Ren, Hellmut Eckert, Kazimirz Conder, Wei-tin Chen, Fang-heng Chou, Noriya Ichikawa, Yuichi Shimakawa, Werner Paulus, 1D oxygen diffusion mechanism in Sr_2ScGaO_5 electrolyte explored by neutron and synchrotron diffraction, 17O-NMR and DFT calculations, **J. of Phys. Chem. C** 119 (2015) 11447-11458 (Impact factor-4.51)

[30]. R. Loganathan, K. Prabhakaran, S. Pradeep, S. Surender, **Shubra Singh**, K. Baskar, Influence of TMIn flow rate on structural and optical quality of AlInGaN/GaN epilayers grown by MOCVD, **Journal of Alloys and Compounds** 656:640–646 (2015), (Impact factor-3)

[31]. The effect of growth temperature on structural quality of AlInGaN/AlN/GaN heterostructures grown by MOCVD, R.Loganathan, M. Balaji, K. Prabakaran, R. Ramesh, M. Jayasakthi, P. Arivazhagan, **Shubra Singh**, K. Baskar, **Journal of Materials Science: Materials in Electronics** 26 (2015) 5373–5380 (Impact Factor-1.569)

[32]. Suchita Sangwan. K. Baskar and Shubra Singh, Synthesis and characterization of brownmillerite $SrFeO_{2.5}$ in nanostructured form, **AIP conference proceedings** 1665, 050005 (2015); doi: 10.1063/1.4917646.

[33]. R. Loganathan, R. Ramesh, M. Jayasakthi, K. Prabakaran, B. kuppulingam, M. Sankaranarayanan, M. Balaji, P. Arivazhagan, Shubra Singh and K. Baskar, Growth of AlN nanostructure on GaN using MOCVD, **AIP conference proceedings** 1665, 050005 (2015); doi: 10.1063/1.4917646.

[34]. Sumithra Sivadas Menon, B. Kuppulingam, R. Ramesh, K. Baskar, and **Shubra Singh**, Morphology and Spectroscopic Studies on Nanostructured Wurtzite ZnO-GaN Solid Solution for Photocatalytic Applications, **Adv. Sci. Lett**. 20, 1094-1097 (2014) Impact factor (1.25)

[35]. **Shubra Singh,** Sumithra Sivadas Menon, K. Gupta and R. Jayavel, Investigation of $CaFeO_{2.5}$ single crystals grown by flux growth technique, **Materials Letters**, 131 (2014) 332–335 (Impact Factor 2.48)

[36]. M. Jayasakthi, R. Ramesh, K. Prabakaran, R. Loganathan, B. Kuppulingam, M. Balaji, P. Arivazhagan, S. Sankaranarayanan, **Shubra Singh**, and K. Baskar, Effect of Al-mole fraction in $Al_xGa_{1-x}N$ grown by MOCVD, **AIP Conference Proceedings** 1591 1458 (2014)

[37]. Synthesis, morphology and optical properties of GaN and AlGaN semiconductor nanostructures B. Kuppulingam, **Shubra Singh**, and K. Baskar, **AIP Conference Proceedings** 1591, 1437 (2014)

[38]. E. Senthil Kumar, Shubra Singh and M. S. R. Rao, "Zinc Oxide: The versatile material with an assortment of physical properties" **Springer Series in Materials Science** 180, 1-38 (2014).

[39]. R. Ramesh, R. Loganathan, Sumithra Sivadas Menon, K. Baskar and Shubra Singh, Controlled nucleation and growth of nanostructures by employing surface modified GaN based layers/heterostructures as bottom layer, **RSC Advances** 4 (14) (2013) 7112 - 7119. (Impact Factor 3.8)

[40]. R. Loganathan, M. Jayasakthi, K. Prabakaran, R. Ramesh, P. Arivazhagan, B. kuppulingam, S. Sankaranarayanan, Shubra Singh and K. Baskar, Growth and characterization of AlInGaN/AlN/GaN grown by MOCVD, **Physics of Semiconductor devices,** V. K. Jain and Abhishek Verma (Editors) by Environmental Science and Engineering, **Springer,** (2013) 117-119.

[41]. **Shubra Singh**, Growth of $CuInS_2$ Nanotubes from Cu_2S - $CuInS_2$ heterostructures as a Potential Photovoltaic Material, **Analytical letters** 46 (2013) 1587-1596 (Impact factor – 1.03)

[42]. Kapil Gupta, **Shubra Singh**, Monica Ceretti, M.S. R. Rao, and Werner Paulus, Scaling of extended defects in nano-sized Brownmillerite $CaFeO_{2.5}$, **Phys. Status Solidi A**, 210, 1–7 (2013). (Impact factor – 1.525)

[43]. **Shubra Singh,** Kapil Gupta, M. S. R. Rao, Synthesis and microstructural investigation of $Sr_2Co_2O_5$ as cathode and gadolinia doped ceria as electrolyte material for SOFC application, **J. Nanosci. Lett.** (2013) 3: 12, 1-4.

[44]. **Shubra Singh**, Sunil Kumar Samji and M.S. R. Rao, Synthesis and characterisation of $CuInGaS_2$ nano-ink for photovoltaic applications, **Journal of Experimental Nanoscience** (2012) 1–6. (Impact factor – 0.98)

[45]. **Shubra Singh**, J.N.Divya Deepthi, B. Ramachandran and M. S. R. Rao, Synthesis and comparative study of Ho and Y doped ZnO nanoparticles, **Material Letters** 65 (2011) 2930-2933. (Impact factor – 2.48)

[46]. C. Sudakar, **Shubra Singh**, M.S.R. Rao and G. Lawes, "The role of defects in multifunctional oxide nanostructures" in Functional Metal Oxide Nanostructures, with Junqiao Wu, Weiqiang Han, Ho-Cheol Kim, Anderson Janotti, Jinbo Cao (Editors), **Springer** (2011) 37-69.

[47]. **Shubra Singh**, Daisuke Nakamura, Kentaro Sakai, Tatsuo Okada and M S Ramachandra Rao, Investigation of low-temperature excitonic and defect emission from Ni-doped ZnO nanoneedles and V-doped ZnO nanostructured film ***New Journal of Physics*** 12 (2010) 023007. (Impact factor – 3.558)

[48]. **Shubra Singh**, E. Senthil Kumar, M. Kottaisamy and M. S. Ramachandra Rao Synthesis and formation mechanism of ZnO Nanobrushes, ***AIP Conf. Proc***. 1276, (2010) 37-42.

[49]. E. Senthil Kumar, Jyothirmoy Chatterjee, **Shubra Singh**, Nandita Dasgupta, M. S. Ramachandra Rao, Thin Film Growth, Electrical Transport and Ohmic Contact Studies of p-ZnO, ***IEEE Region 10 Annual International Conference, Proceedings/TENCON*** (2010) 995-997.

[50]. **Shubra Singh**, E. Senthil Kumar and M. S. Ramachandra Rao, Microstructural Study of Assorted ZnO Nanostructures: Nanocombs, Nanocones and Microspheres ***J. of Nanoscience and Nanotechnology*** 9 (2009) 1–5. (Impact factor – 1.556)

[51]. **Shubra Singh** and M.S. Ramachandra Rao, Green light emitting oxygen deficient ZnO forks, brooms and spheres**,** ***Scripta Materialia*** 61 (2009) 169-172. (Impact factor – 3.22)

[52]. **Shubra Singh** and M. S. Ramachandra Rao, Optical and electrical resistivity studies of isovalent and aliovalent 3d transition metal ion doped ZnO, ***Phys. Rev. B- Condensed Matter and Materials Physics*** 80 (2009) 045210. (Impact factor – 3.736)

[53]. **Shubra Singh**, N. Rama, K. Sethupathi and M. S. Ramachandra Rao, Correlation between electrical transport, optical, and magnetic properties of transition metal ion doped ZnO, ***Journal of Applied Physics*** 103 (2008) 07D108. (Impact factor – 2.183)

[54]. **Shubra Singh**, E. Senthil Kumar and M. S. Ramachandra Rao, Microstructural, optical and electrical properties of Cr doped ZnO, ***Scripta Materialia*** 58 (2008) 866–869. (Impact factor – 3.22)

[55]. **Shubra Singh**, S. Bhaskar Reddy, M. Kottaisamy, M. S. Ramachandra Rao, Formation of ZnO nanobrushes in direct atmosphere using carbon catalyst and Zn metal source, ***NANO*** 3 (2008) 361–365. (Impact factor 1.09)

[56]. **Shubra Singh**, P Thiyagarajan, K Mohan Kant, D Anita, S Thirupathiah, N Rama, Brajesh Tiwari, M Kottaisamy and M S Ramachandra Rao, Topical review: Structure, microstructure and physical properties of ZnO based materials in various forms: bulk, thin film and nano, **J. Phys. D: Appl. Phys**. 40 (2007) 6312-6327 . (Impact factor – 2.72)

[57]. **Shubra Singh** and M. S. Ramachandra Rao, Structure and Physical Properties of Undoped ZnO and Vanadium Doped ZnO Films Deposited by Pulsed Laser Deposition, ***J. of Nanoscience and Nanotechnology*** 8 (2007) 1–3. (Impact factor 1.1)

[58]. **Shubra Singh**, N. Rama and M. S. Ramachandra Rao, Transport properties of transition metal doped ZnO: bulk and thin films, ***Mat. Res. Soc. Sym. Pro***. (2007) 397-402.

[59]. **Shubra Singh**, N. Rama and M. S. Ramachandra Rao, Influence of d-d interband transitions on electrical resistivity in Ni doped polycrystalline ZnO, ***Appl. Phys. Letts.*** 88 (2006) 222111-222113. (Impact factor – 3.302)

Patents/IPR Filed:

Sl. No.	Details of Inventions	Patents No.	Date & Countries	If marketed,
1.	**A OXYGEN-DEFICIENT NANOMATERIAL FOR REVERSIBLE CO_2 CAPTURE AT ROOM TEMPERATURE ……**	Patent filed-Application No. **5170/CHE/2013**	19/11/2013 India	------
2.	Novel synthesis of nanostructured.....	Patent filed	18.08.2014 India	--------
3.	METHOD FOR SYNTHESIS OF SILLENITE SINGLE CRYSTALS….	201841028670 A	31/07/2018	……
4.	METHOD FOR DEVELOPING CA2FE2O5 NANOPARTICLES FOR ENHANCED PHOTOCATALYSIS UNDER DIRECT SUNLIGHT	201841028665 A	03/08/2018	…….

Research guidance listing:

Research Degree	**Name of Scholar**	**Title of Thesis**	**Year of award**	**Main Supervisor (Guide)**
Ph.D	Sumithra Sivadas Menon	Investigations on Development of ZnO based Oxynitrides for Photocatalytic Applications	Completed	Dr. Shubra Singh
Ph.D	Suchita Dhankhar	**Investigation of $Ca_2Fe_2O_5$ in single crystalline and polycrystalline form**	Completed	Dr. Shubra Singh
Ph.D	Anitha	Growth and characterization of GaN based heterostructures	Ongoing	Dr. Shubra Singh

Ph.D	R. Janani	Sulfide based photocatalysis	Ongoing	Dr. Shubra Singh
Ph.D	V. Durga Shankar	Multiferroic Photovoltaics	Ongoing	Dr. Shubra Singh
Master's thesis	Anlet Caroline	Synthesis and characterization of a photocatalyst	2015	Dr. Shubra Singh

Role in and details of externally funded projects carried out, listing :

Sl	Title of the Project and Role	Quantum of Support	Funding Agency	Years of Project
1	Realization of high oxygen ion mobility in Ca and Sr based compounds **(Principal and sole Investigator - Dr. Shubra Singh)**	90 Lakhs (including Award amount)	DST-INSPIRE	5 years (Aug. 2012-July 2017)
2	Surface modified GaN/InGaN Heterostructures with AIGaN barrier layers for photovoltaics applications **(Co-Investigator-Dr. Shubra Singh)**	65 Lakhs (approx.)	DST SERI	3 Years (2014-2017)
3	DST Fast Track Young Scientist Project **(Principal and sole Investigator-Dr. Shubra Singh)**	8.64 Lakhs	DST	3 years (2014-2017)
4	Long term CRS proposals under the aegis of UGC-DAE CSR for the year 2014-15 **(Co-Investigator-Dr. Shubra Singh)**	6 Lakhs	UGC-DAE	3 years (2014-2017)
5	UGC Grant for FRP **(Principal and sole Investigator - Dr. Shubra Singh)**	6 Lakhs	UGC	2 years (2018-2020)
6	DST-Extra Mural Research Grant (**Principal Investigator - Dr. Shubra Singh**)	37 lakhs	SERB	Funds sanctioned (2018)
7	Investigator from Anna University for Solar Fuel domain under DST Solar Energy Harnessing Centre (DSEHC) set up at IIT Madras	29.5 lakhs	DST SERI	Funds sanctioned (2018)

Book Published

(i) **Book:** M.S.R. Rao and **Shubra Singh** "Nanoscience and Nanotechnology: Fundamentals to Frontiers", Wiley publications (India), 2013.

(ii) Co-authors of **three book chapters** with Springer (2013)

Conferences organized (as a Co-organizer)

(i) Organizer, UGC Short term course on 9-10 Jan, 2017 on State of Art Analytical Techniques.

(ii) Organizer, Two days workshop (Lecture cum Demonstration Programme) 10-11 August 2017 on AFM, MFM, EFM, KPFM, STM & PFM at CGC, Anna University, Chennai

(iii) Advisory committee of International conference on Laser deposition (icold 2017) Nov 20-22 2017

(iv) Member of organizing committee of the International symposium on Semiconductor Materials and Devices (ISSMD-3), Feb 02-05, 2015, Crystal Growth Centre, Anna University, Chennai.

(v) **International workshop on electronic Materials Technology,** Mar 13-15, 2014, Crystal Growth Centre, Anna University, Chennai.

(vi) Member Co-ordinator of 25th National Seminar on Crystal Growth and Epitaxy (NSCGE - 25), Feb 06-07, 2015 Crystal Growth Centre, Anna University, Chennai.

(vii) **International workshop on Crystal Growth and Characterization of Advanced Materials and Devices**, Dec 16-19, 2012, at Crystal Growth Centre, Anna University, Chennai.

Membership:

1. Life member: **Indian Science Congress**
2. **Technical Committee member and Project co-ordinator** appointed by Anna University for schools and colleges by Robotics and Artificial Intelligence Foundation (RAIF)
3. **Selection panel member for Projects-Recruitment during the Academic year 2019-2020**

Refereed journals for:

Solar Energy Materials and Solar Cells, RSc Advances, Journal of Luminescence, Scientific Reports, International Journal of Hydrogen Energy, Materials Research Express

Invited Talks/oral talks presented:

1. Kyushu University, Japan
2. University of Rennes 1, UMR 6226 CNRS, France (2009)
3. IWCGCAMD, Anna University, Chennai (2012)
4. National Smart Olympiad, Hyderabad (Jan. 2013)
5. Delivered a talk on "Synthesis and characterization of Brownmillerite compounds" at Materials Research Centre, IISC Bangalore on 27th August 2013.
6. IWEMT 2014, Anna University, Chennai (2014)

7. VIT Vellore 27 April (2016)
8. ISSMD4, Chennai, India
9. ICNBL 2016, Srinagar, India
10. IUMRS-ICYRAM2016, IISC Bangalore, Dec 2016
11. Invited talk at International conference on Laser deposition (icold 2017) Nov 20-22, IIT Madras, 2017
12. Contributory talk at ISMANAM 2019, IIT Madras, Chennai, 8th July 2019

Professional Training/Workshops attended

[1]. Workshop on Ultra High Vacuum: Application to Material Research, 19-21 Feb. 2002, SINP, Kolkata, organized by Indian Physics Association (Calcutta Chapter), Material Research Society of India (surface and Interfaces group) in collaboration with SINP and Nuclear Science Center, New Delhi.
[2]. Workshop on Cryogenics: Experiments and Applications, 21-23 Mar. 2003, SINP, Kolkata, organized by Indian Physics Association (Calcutta Chapter).
[3]. Indo-NUS workshop on current trends in physics, 28-01 Feb-Mar. 2008, Indian Institute of Technology Madras, Chennai, India.

[4]. Research Project on nanoparticles embedded soft matter, IISC Bangalore (Jan-Mar. 2011)

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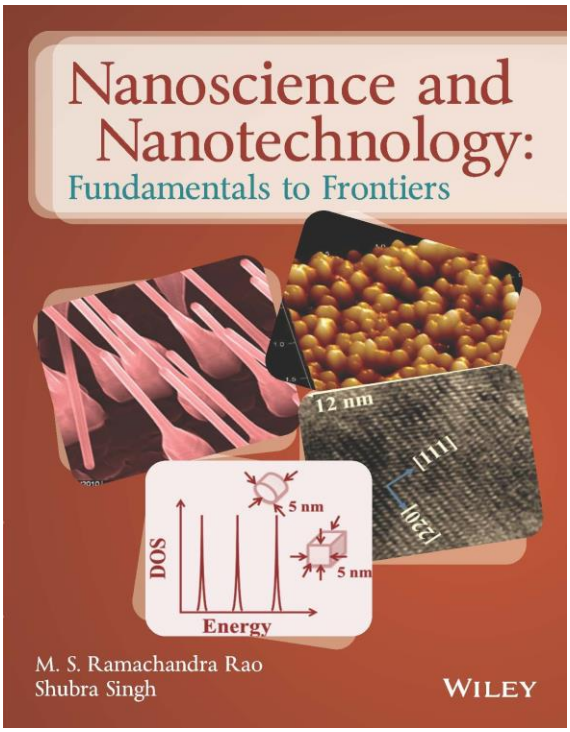
Visits abroad for presenting research work and scientific collaboration:

Singapore, Japan, U.S. and France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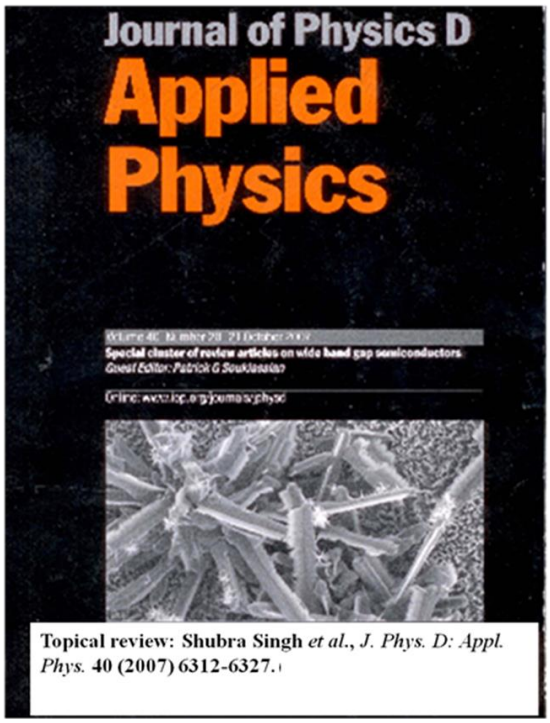
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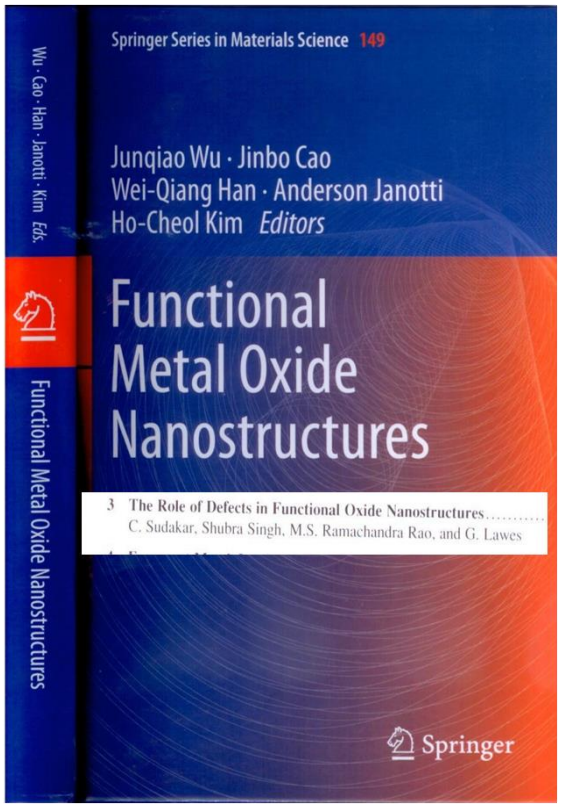
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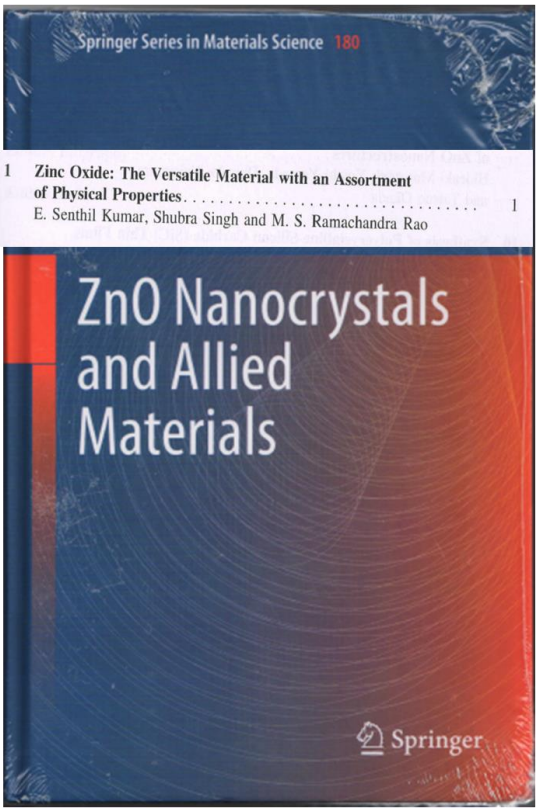
Functional Metal Oxide Nanostructures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