

Faculty Profile

1. Name: RAJKUMAR SINGHA
2. Designation: ASSISTANT PROFESSOR, STAGE- II
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Scopus ID, WOS ID, Vidyan ID, Research Gate):

8. Membership of Learned Societies: No

9. Homepage (If any): No

10. Publication Summary:

(a) No. of Research papers – 31 International Journal paper, 4 IEEE Conference proceedings.

(b) No. of Book Chapters – 2 Book Chapters

(c) No. of Conference papers – 26 International Conference, 5 National Conference

(d) h-index - 13

(e) i-10 index - 16

11. Date of Joining Visva-Bharati Service: 30/03/2013

12. Education:

Degree	Year	University/Institution
Ph. D.	2011	IIT Kharagpur
M. Tech.	2004	IIT Kharagpur
B. Sc.	1995	Calcutta University

13. Academic Positions held (in reverse chronological order)

Sl. No.	Positions held	Institution	Period
1	Assistant Professor	Visva-Bharati	30/03/2013 to till date
2	Assistant Professor	SVNIT, Surat , Gujarat	29 June, 2012 to 29 March, 2013
3	Assistant Professor	NIT, Agartala	1 March, 2012 to 1 June, 2012
4	Research Associate	IIT-Kharagpur under DRDO Project	16/06/11 to 29/02/2012

14. Areas of Research: Semiconductor Nanotechnology, Experimental Condensed Matter Physics

15. Subject Specialization: Condensed Matter Physics

16. Courses Teach / Taught:

Undergraduate Courses	Thermal Physics, Optics (Physical and Geometrical), Electricity & Magnetism (Theory), Thermal Physics, Electricity, Electronics and Optics (Laboratory)
Postgraduate Courses	Thin Film Deposition and Vacuum Technique (Theory), General Lab I, General Lab II, Condensed Matter Physics Special Lab, Electronics Lab.
Ph.D. Course-work	Material Science

17. Research Guidance:

- (a) No. of Postdoctoral students (Completed / Ongoing): Nil
- (b) No. of Doctoral students (Completed / Ongoing): Nil
- (c) No. of M.Sc. Dissertations: 24

18. Research Collaboration (National / International): In different Institutions and colleges (National)

19. Research Grants/Projects: Nil

Sl. No.	Project Title	PI/Co-PI	Funding Agency	Amount	Completed/Ongoing

20. Professional Recognition/ Award/ Prize/Fellowship

Sl. No.	Name of Award	Awarding Agency	Year
1	Best poster presentation award on National Workshop on Nanotechnology for Defence Applications (NWDA-2011). Memento	Defence Research and Development Organisation (DRDO), Govt. of India	2011
2.	Best poster presentation award, 98 th Indian Science Congress, Chennai. Cash Prize	Indian Science Congress Association	January 2011
3	Best poster presentation award, NSNT-2007. Cash Prize	Nanoscience and Nanotechnology Initiative, Department Science and Technology (DST), Govt. of India.	2007
4	National Doctoral Fellowship (NDF),	High value scholarship from AICTE, Govt. of India.	2005
5	GATE	AICTE, Govt. of India	2002

21. Books / Book Chapters

Sl. No.	Title	Name of Author(s)	Publisher	Year of Publication
1	Silicon-Based Detectors and Sources for Optoelectronic devices	Rajkumar Singha, Samit K. Ray	CRC Press, Taylor & Francis Group, New York, ISBN: 978-1-4665-0613-8, DOI: https://doi.org/10.1201/b14841	2013
2	Characteristics of Ge nanocrystals grown by RF magnetron sputtering	R. K. Singha, K. Das, S. Das, A. Dhar and S. K. Ray	Trans Tech Publications Ltd., Switzerland, ISBN 0-87849-471-5	2008

22. Detail of Patent received (if any) Nil

Sl. No.	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country

23. Talks Delivered at International / National Conferences/Seminars/Symposium: Invited talks 2, Participatory delegate talks 10.

24. List of Scientific Publications: List is enclosed below.

Published papers in International Journals

Published 31 International Journal Papers, 2 Book Chapters, 4 IEEE Conference Proceedings, presented papers/poster and deliver talk on 26 International conference and 5 National Conference. Deliver 2 Invited talks.

1. Gayatree Mandal, Rajkumar Singha, and M. N. Goswami “Enhancement of energy storage efficiency in lanthanum and cobalt co-doped BiFeO₃ nanomaterials” J Mater Sci: Mater Electron, (2024) 35:1160, 16 pages, Accepted: 6 June 2024.
2. R. Singha and Himadri Mullick, Enhancement of electrical conductivity of biopolymer by sulfur nanoparticle dispersion technique, Materialwissenschaft und Werkstofftechnik, Wiley, VCH, 55 (3) (2024) 337-342, Accepted 20 Sep, 2023.
3. Gayatree Mandal, Rajkumar Singha, and M. N. Goswami “Optimization of magnetic and magnetodielectric effect for BiFe(Nd)O₃ nanoparticles”, J Nanopart Res. (2024) 26-238, 14 pages, Accepted : 25 September, 2024.
4. R.K. Singha, S. Manna, R. Bar, S. Das, S.K. Ray, Surface potential, charging and local current transport of individual Ge quantum dots grown by molecular beam epitaxy, Applied Surface Science, 407 (2017) pp. 418 – 426, Accepted 15 June, 2017.

5. S. Das, S. Manna, R. K. Singha, R. Aluguri, S. K. Ray, Effect of growth temperature and post-growth annealing on luminescence properties of molecular beam epitaxy grown single layer Ge quantum dots, *Journal of Applied Physics*, 113 (6), 063101, February 8 (2013).
6. Yizhak Yacoby, Naomi Elfassy, Samit K. Ray, Raj K. Singha, Samaresh Das, Eyal Cohen, Shira Yochelis, Roy Clarke & Yossi Paltiel, Morphology and growth of capped Ge/Si quantum dots, *J Nanopart Res*, Vol 15, Article No. 1608, 4th April. (2013).
7. Santanu Manna, Rakesh Aluguri, Samaresh Das, Rajkumar Singha, and Samit K. Ray, “Electroluminescence from metal-insulator-semiconductor tunnelling diodes using compressively strained Ge on Si_{0.5}Ge_{0.5} virtual substrates”, *Optics Express*, Vol 21, Issue no. 23, pp 28219-28231 (2013).
8. S. Manna, S. Das, S Mondal, R. K. Singha and S. K. Ray, “High Efficiency Si/CdS Radial Nanowire Heterojunction Photodetectors Using Etched Si Nanowire Templates”, *Journal of Physical Chemistry C*, accepted, 2012.
9. S. Das, R. Aluguri, S. Manna, R. K. Singha, A Dhar, L Pavesi and S. K. Ray, “Optical and electrical properties of undoped and doped Ge nanocrystals”, *Nanoscale Research Letters*, vol. 7, p. 143, 2012.
10. R. Aluguri, S. Das, S. Manna, **R. K. Singha** and S. K. Ray, “Photoluminescence characteristics of Er doped Ge nanocrystals embedded in alumina matrix”, *Optical Materials*, Accepted, 2012.
11. R. K. Singha, S. Manna, S. Das, A. Dhar, and S. K. Ray, (2010), “Room temperature infrared photore-sponse of self assembled Ge/Si (001) quantum dots grown by Molecular Beam Epitaxy”, *Appl. Phys. Lett.*, vol. 96, pp. 233113-3.
12. S. K. Ray, R. K. Singha, S. Das, S. Manna, A. Dhar, “Ge based nanostructures for electronic and pho-tonic devices”, *Microelectronics Reliability*, 50, 674–678 (2010).
13. R. K. Singha, S. Das, A. Dhar, S. K. Lahiri, S. K. Ray, A. Surawijaya, and S. Oda, “Single Hole Charg-ing at Room Temperature of Ge Quantum Dots Grown on Si(001) by Molecular Beam Epitaxy” *Nanoscience and Nanotechnology Letters* Vol.1, 1–5, 2009.
14. R. K. Singha, S. Das, S. Majumdar, K. Das, A. Dhar and S. K. Ray, “Evolution of strain and composi-tion of Ge Islands on Si (001) Grown by Molecular Beam Epitaxy during Post-Growth Annealing” *J. Applied Physics*, 101, 114301, 2008.
15. R. K. Singha, S. Das, K. Das, S. Majumdar, A. Dhar and S. K. Ray, “Shape and size distribution of MBE grown self-assembled Ge islands on Si (001) substrates” *J. Nanoscience & Nanotechnology*, Vol. 8, No. 7, pp. 4101-4105, 2008.
16. R. K. Singha, K. Das, S. Das, A. Dhar and S. K. Ray, “Characteristics of Ge nanocrystals grown by RF magnetron sputtering” *Advanced Materials Research*, vol. 31, pp. 89-91, 2008.
17. R. Singha, A. Dhar, D. Bhattacharya, M. Chakraborty, V. Srinivas, S. K. Ray, “Correlation between microstructure and electronic behaviour in rapidly quenched Fe-substituted granular Cu–Co alloys”, *Thin Solid Films*, 505, 157 – 160, 2006.

18. S. K. Ray, S. Das, K. Das, R. K. Singha, S. Manna, A. Dhar, "Structural and Optical Properties of Germanium Nanostructures on Si (100) and Embedded in High-k Oxides", *Nanoscale Research Letters* 6, 224 (2011).
19. S. Das, R. K. Singha, S. Gangopadhyay, A. Dhar and S. K. Ray, (2010), "Microstructural characteristics and phonon structures in luminescence from surface oxidized Ge nanocrystals embedded in HfO₂ matrix", *J. Appl. Phys.*, vol. 108, pp. 053510-1-7.
20. S. Das, R. K. Singha, S. Manna, S. Gangopadhyay, A. Dhar and S. K. Ray, (2011), "Microstructural, chemical bonding, stress development and charge storage characteristics of Ge nanocrystals embedded in hafnium oxide", *J. of Nanoparticle Research*, vol. 13, pp. 587–595.
21. S. Das, S. Manna, R. K. Singha, A. Anopchenko, N. Daldosso, L. Pavesi, A. Dhar, and S. K. Ray, (2011), "Light emission and floating gate memory characteristics of germanium nanocrystals", *Physica status solidi A*, vol. 208, pp. 635-638.
22. S. Das, K. Das, R. K. Singha, S. Manna, A. Dhar, S. K. Ray and A. Raychaudhuri, (2011), "Improved IR photoluminescence characteristics from circularly ordered self-assembled Ge islands", *Nanoscale Research Letters*, vol. 6, pp. 416.
23. S. Das, R. K. Singha, A. Dhar, S. K. Ray, A. Anopchenko, N. Daldosso and L. Pavesi, "Electroluminescence and charge storage characteristics of quantum confined germanium nanocrystals," *J. Appl. Phys.*, vol. 110, pp. 024310-4 (2011)
24. S. Das, K. Das, R. K. Singha, A. Dhar, and S. K. Ray, "Improved Charge Storage Characteristics of Ge Nanocrystals Embedded In Hafnium Oxide", *Appl. Phys. Letts.* Vol. 91, p. 233118, 2007.
25. S. K. Ray, R. K. Singha, S. Das, K. Das and A. Dhar, "Properties of self-assembled Ge Islands grown by molecular beam epitaxy, *International J. Nanoechnology*, Vol. 6, Nos. 5/6, pp.552–566, 2009.
26. S. Das, R. K. Singha, K. Das, A. Dhar, and S. K. Ray, "Silicon Dioxide Embedded Germanium Nanocrystals Grown Using Molecular Beam Epitaxy for Floating Gate Memory Devices", *Journal of Nanoscience and Nanotechnology*, 9, pp.5484–5488, 2009.
27. S. Majumdar, R. K. Singha, J. Yoon, M. H. Jung, M. Chakraborty, A. K. Das, S. K. Ray, "Microstructure and magnetic properties of melt-spun Cu_{0.95}Co_{0.05} granular alloy" *Physica B* (2009), vol. 404, pp.1858, (2009).
28. S. Mandal, R. K. Singha, A. Dhar, S.K. Ray, "Optical and structural characteristics of ZnO thin films grown by rf magnetron sputtering" - *Mat. Res. Bull.*, 43, pp. 244–250, 2008.
29. S. Majumdar, R. K. Singha, K. Das, M. Chakraborty, A.K. Das and S.K. Ray, "Temperature-dependent texture, stress and resistivity in melt spun Cu_{0.95}Co_{0.05} ribbon" *Physica B*, 403 pp.2059–2064, 2008.
30. K. Das, A. K. Chakraborty, M.L. NandaGoswami, R. K. Shingha, A. Dhar, K. S. Coleman and S. K. Ray, "Formation of Y- and T-junction Ge nanowires by vapor-liquid-solid mechanism" *Int. J. Nanoscience*, Volume: 6, Issue: 6, pp. 467-471, 2007.

31. K. Das, A. K. Chakraborty, M. L. Nanda Goswami, R. K. Singha, A. Dhar, K. S. Coleman and S. K. Ray, “Temperature dependent shape transformation of Ge nanostructures by vapor-liquid-solid method” J. Appl. Phys., 101, 074307, 2007.

Book Chapter

1. Rajkumar Singha, Samit K. Ray, “Silicon-Based Detectors and Sources for Optoelectronic devices”, Pages: 203-230, Guided Wave Optics and Photonic Devices, Editors: Shyamal Bhadra, Ajoy Ghatak, Publisher: CRC Press, Taylor & Francis Group, New York, ISBN: 978-1-4665-0613-8, DOI: <https://doi.org/10.1201/b14841>, 2013.
2. R. K. Singha, K. Das, S. Das, A. Dhar and S. K. Ray, “Characteristics of Ge nanocrystals grown by RF magnetron sputtering”, in an Edited book “Semiconductor Photonics: Nanostructured Materials and Devices” eds. S. J. Chua, J.H.Teng, O.Wada, R. de la Rue and X. H. Tang, Trans Tech Publications Ltd., Switzerland, ISBN 0-87849-471-5,(2008).

Award

1. Best poster presentation award, NSNT-2007 from Nanoscience and Nanotechnology Initiative, Department Science and Technology (**DST**), Govt. of India. Cash Prize
2. Best poster presentation award, 98th Indian Science Congress, Chennai, January 2011 from **Indian Science Congress Association**. Cash Prize
3. Best poster presentation award on National Workshop on Nanotechnology for Defence Applications (NWDA-2011) from Defence Research and Development Organisation (**DRDO**), Govt. of India. Memento

Fellowship:

1. GATE -2002, AICTE, Govt. of India.
2. National Doctoral Fellowship (NDF) 2005, High value scholarship from AICTE, Govt. of India.

Invited Talk:

1. Rajkumar Singha, “CAFM and KPFM – the noble characterization techniques to know about the single quantum dot grown using Stranski-Krastanov (S-K) mode”, National Seminar on “Recent Trends in Advanced Functional Materials” Midnapore College, West Bengal during January 13 - 14, 2020.
2. R. K. Singha delivered a invited talk on “Hetero-epitaxial growth of Ge/Si nanostructures for quantum device applications by physical deposition techniques” for ONE WEEK FACULTY DEVELOPMENT (TE-

QIP-II) PROGRAMME ON “Fundamentals and Advances of Solid State Matters for Technological Applications” organized by Dept of Electronics and Communication Engineering & Dept of Basic Science and Humanities, RCC INSTITUTE OF INFORMATION TECHNOLOGY, Kolkata, 6th July -10th July 2015.

Four papers on IEEE conference proceedings

1. S. Das, **R. K. Singha**, A. Dhar and S. K. Ray, “Conducting force microscopy and hole charging in Ge islands grown by RF sputtering”, IEEE INEC, p. 1-2, 2011.
2. Das, S.; **Singha, R.K.**; Manna, S.; Dhar, A.; Ray, S.K., “Optical properties of self-assembled Ge(Si) quantum dots grown on Si(001) by molecular beam epitaxy”, Advanced Optoelectronic Materials and Devices, IEEE AOMD, p. 206 – 212, 2008.
3. **R. K. Singha**, S. Das, K. Das, A. Dhar and S. K. Ray, (2007), “Growth of Ge Nanoislands on Si (001) using Molecular Beam Epitaxy”, IEEE conference proceedings, No. 978-1-4244-1727-8/07.
4. S. Das, **R. K. Singha**, K. Das, A. Dhar and S. K. Ray, (2007), “Growth of Strained SiGe layers and SiGe/Si Multiple Quantum Well Structures using Molecular Beam Epitaxy”, IEEE conference proceedings, No. 978-1-4244-1728-5/07.

Papers submitted in International Conferences & Symposia

1. **Rajkumar Singha**, presented a oral paper on “Enhancement of magnetic and magnetodielectric properties in neodymium incorporated BiFeO₃ nanomaterials”, in International Conference on Natural Sciences and Engineering for Sustainable Development (NSES2024), organized in Department of Physics, Kazi Nazrul University, Asansol during 6-7 March, 2024.
2. **Rajkumar Singha**, “Measurement of the composition and film thickness of the Ge/Si quantum dot hetero-junction samples by the Rutherford Backscattering technique”, International Conference on Recent Issues in Nuclear and Particle Physics, Department of Physics, Visva-Bharati during February 3 – 5, 2019.
3. **R. K. Singha**, S. Das, S. Manna, A. Dhar, and S. K. Ray, "Infrared Photo current detection using inter subband transitions in MBE grown Ge Quantum dots", pp.150-1512, 15th International workshop on the physics of Semiconductor Devices (IWPSD-2009).
4. S. K. Ray, **R. K. Singha**, S. Das, S. Manna, and A. Dhar, "Properties of self-assembled Ge/Si (001) quantum dots grown by Molecular Beam Epitaxy", pp.22, 15th International workshop on the physics of Semiconductor Devices (IWPSD-2009).
5. S. Das, **R. K. Singha**, S. Gangopadhyay, A. Dhar, and S. K. Ray, “Luminescence fine structures from Ge nanocrystals embedded in HfO₂ matrix”, Proc. 1st Intl. Workshop on Si based nano-electronics and photonics, Vigo, Spain, Sep. 20 -23, pp. 39, (2009).
6. S. Das, **R. K. Singha**, S. Manna, A. Dhar, and S. K. Ray, "Photoluminescence and single hole charging in

Ge Quantum dots grown by MBE", pp. 213, 15th International workshop on the physics of Semiconductor Devices (IWPSD-2009).

7. S. Das, R. K. Singha, S. Manna, A. Dhar and S. K. Ray, "Optical Properties of Self-assembled Ge(Si) Quantum Dots Grown on Si(001) by Molecular Beam Epitaxy", pp. 206-212, Advanced Optoelectronic Materials and Devices (AOMD), Dec 22-24, Banaras Hindu University, Varanasi, India, (2008)

8. R. K. Singha, K. Das, S. Das, A. Dhar, and S. K. Ray, "Characteristics of Ge Nanocrystals on Si (100) Grown by RF Magnetron Sputtering", Symposium-D: Semiconductor Photonics: Nanostructured Materials and Devices, Int. Conf. on Material for Advanced Technologies, Singapore, July 1-6, pp. 21, (2007).

9. S. Das, R. K. Singha, K. Das, A. Dhar and S. K. Ray, "Silicon dioxide embedded germanium nanocrystals grown using molecular beam epitaxy for memory device applications", Proc. International Conference on Nano Science & Technology, Chennai, Feb. 27-29, C026, (2008).

10. R. K. Singha, S. Das, S. Majumdar, K. Das, A. Dhar, and S. K. Ray, "Shape and size distribution of self-assembled Ge nanocrystals on Si (001) substrates grown by molecular beam epitaxy", Proc. of Advanced Nano Materials (ANM), IIT, Bombay India, Jan. 8-10, pp.85, (2007).

11. R. K. Singha, S. Das, K. Das, A. Dhar and S. K. Ray, "Growth of Ge Nanoislands on Si (001) using Molecular Beam Epitaxy", Proc. of international workshop on the physics of semiconductor devices (IWPSD-2007) 16-20 Dec, IIT-Bombay, Mumbai, India, p 205, (2007).

12. R. K. Singha, S. Das, K. Das, A. Dhar and S. K. Ray, "Shape and Size Distribution of Self-assembled Ge Islands on Si(001) Grown by Molecular Beam Epitaxy", Proc. of 10th International Conference on Advanced Material (IUMRS-ICAM 2007), 8-13 Oct, Bangalore, India, p. D-13, (2007).

13. R. K. Singha, K. Das, S. Das, A. Dhar and S. K. Ray, "Characteristics of Ge Nanocrystals Grown by RF Magnetron Sputtering", Proc. of ICMAT, Singapore, (2007).

14. R. K. Singha, K. Das, S. Das, A. Dhar, and S. K. Ray, "Self-assembled growth of Ge islands on Si(001) using molecular beam epitaxy", Proc. of National review and coordination meeting on nanoscience and nanotechnology (NSNT), Hyderabad India, Feb. 21-23, P2-26, (2007).

15. S. Das, R. K. Singha, K. Das, A. Dhar, and S. K. Ray, "Growth of Strained SiGe Layers and SiGe/Si Multiple Quantum Well Structures using Molecular Beam Epitaxy", Proc. Intl. Workshop on Phys. of Semicond. Devices, Mumbai India, (IWPSD-2007) Dec. 16-20, pp. 208, (2007).

16. K. Das, R. K. Singha, M.L.N.Goswami, A. Dhar and S. K. Ray, "Vapour-Liquid-Solid Growth of Ge Nanowires for Si Based Devices", Proc.of Advanced Nano Materials – ANM 2007, 8-10 Jan, 2007, Indian Institute of Technology, Bombay, p.86.

17. S. Das, K. Das, R. K. Singha, A. Dhar and S. K. Ray, "Electrical & optical Characteristics of Ge Nanocrystals Embedded in Oxide Matrices for Floating Gate Memory Devices", Proc.of 10th International

Conference on Advanced Material (IUMRS-ICAM 2007) 8-13 Oct, 2007, Bangalore, India, V-8.

18. R. K. Singha, K. Das, S. Das, A. Dhar, and S. K. Ray, “Growth of Ge nanoislands on Si (001) using Molecular Beam Epitaxy”, Proc. of international conference on recent trend on nanoscience and Nanotechnology (ICNRT-06), Jadavpur University, Kolkata India, Dec. 7-9, pp. 318, (2006).

19. S. Majumdar, R. K. Singha, K. Das, V. S. Reddy, A. Dhar, M. Chakraborty, A. K. Das and S. K. Ray, “Microstructural and electrical properties of Cu-Co granular ribbons”, Proc. of international conference on recent trends in nanoscience and nanotechnology (ICNRT-06) 7-9 Dec, 2006, Jadavpur University, Kolkata, p. 251.

20. Surajit Mondal, Rajkumar Singha, Makhan Lal Nanda Goswami, Achaintya Dhar and Samit Kumar Ray, “Optical and structural characteristics of c-axis oriented nanocrystalline ZnO”, Proc. of NANO- 2006, p.201.

21. S. P Mondal, R. K. Singha, K Das, A Dhar and S K Ray, “Characteristics of CdS nanowires grown in porous alumina matrix by two-cell method”, Proc. of 8th International Conference on Nanostructured Materials (NANO 2006), Bangalore, p.163.

22. S. P Mondal, R. K. Singha, K. Das, A. Dhar, and S. K. Ray, “Self-assembled Growth of CdS Nanostructures in Porous Alumina Template by Electrochemical Deposition” Proc. Intl. Conf. On Nanoscience & Nanotechnology, Delhi, March 2006, p. 136.

23. S. Mondal, R. Singha, S. Pal, S. Reddy, A. Dhar and S.K. Ray, “Growth of c-axis Oriented Nanocrystalline ZnO Thin Films Grown by rf Magnetron Sputtering” International Conference on Mems and Semiconductor Nanotechnology, Dec, 20-22, 2005, I.I.T-Kharagpur, India.

24. Sandipan Kundu, Arka Majumdar, Kaushik Dasgupta, Rajkumar Singha, “Characterization Of (Si-SiGe-Si) Interband Tunnelling Diode (Itd) And Applications” International Conference on MEMS and Semiconductor Nanotechnology, Dec, 20-22, 2005, I.I.T-Kharagpur, India.

25. M. Pandey, K. Das, R. K. Singha, S. K. Ray, A. Biswas, and D. Bhattacharyya, “Ultrathin Strained Layered Si-Heterostructure Alloy Films For Nanoelectronic Devices”, Intl. Conf on MEMS and Semiconductor Nanotechnology (MEMS-NANO), IIT Kharagpur India, Dec. 20-22, (2005).

26. R. Singha, B. K, Samantaray, S. K. Ray, V. Srinivas, M. Chakraborty, V. V. Rao, “Correlation Between Microstructure and Electronics Behaviour in Rapidly Quenched Granular Cu-Co Alloys” International Symposium on Advanced Materials and Processing (ISAMAP2K4), 6-8 December 2004, I. I. T., Kharagpur, India.

National Conference & Symposium

1. Rajkumar Singha, “Correlation between Electron microscopy images and conducting Atomic Force Microscopy results”, National Conference on Frontier Areas of Research and Applications using Electron

Microscopy, Siksha-Bhavana and Palli-Siksha Bhavana, Visva-Bharati on March 16, 2018.

2. Rajkumar Singha, “Challenges in Higher Education in India, National Seminar on “Higher Education in India: Critical Issues & Challenges”, IQAC, Daronda College, Ranchi on September 10, 2016.

3. Rajkumar Singha, “Study of electrostatic charge retention properties of self-assembled Ge/Si quantum dots”, Condensed Matter Days 2015, Department of Physics, Visva-Bharati during August 27- 29, 2015.

4. R. K. Singha and S. K. Ray, “Fabrication of Ge Quantum Dot IR Photodetectors on Si and ZnO based Biosensors”, Proc. of National Workshop on Nanotechnology for Defense Applications (NWNDA-2011), November 16-17, 2011, Solid State Physics Laboratory (SSPL), DRDO, Timarpur, Delhi.

5. R. K. Singha, K. Das, S. Das, A. Dhar and S. K. Ray, “Self-assembled growth of Ge islands on Si(001) using molecular beam epitaxy”, Proc. of National review and coordination meeting on nanoscience and nanotechnology (NSNT 2007), Hyderabad, P2-26, Feb 21-23, 2007.

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