Curriculum vitae

Name : SUNIL KUMAR ARORA

Date of birth : 6th Oct., 1966

Areas of Interest :

- Self-assembled magnetic nano-structures
- Surface and Interface magnetism
- Magnetic oxides and interfaces
- Spin Electronics
- Metal insulator transitions
- Nanoscale phase separation
- Gas sensors

Academic Qualifications:

Ph.D. (Physics), 1994
Indian Institute of Technology, New Delhi, India
Title : *"STUDIES ON SQUIDs OF Y-BA-CU-O HIGH Tc SUPERCONDUCTORS"*
(Research work was carried out at the National Physical Laboratory, New Delhi, India)

M.Sc Physics (Solid State), 1986-88
University of Jodhpur, Jodhpur, India.

B.Sc. (Physics), 1983-86,
Rajasthan University, Jaipur, India

Professional Experience :

1. Working as ***Associate Professor*** at *Centre for Nano Science and Nano Technology, Panjab University, Chandigarh, India*, since Oct 2014.

2. Worked as a ***Senior Researcher*** Jan 2002-March 2013 in the Applied Physics Group, CRANN, Trinity college Dublin, Dublin, Ireland.

3. Worked as an ***STA fellow*** at the Nanomaterials Laboratory, National Institute for Materials Science, Tsukuba, Japan, for one year during 2000- 2001.

4. Worked as a ***Research Scientist*** at Nuclear Science Centre, New Delhi, from July, 1996 to Dec., 2000

5. Worked as a ***Research Associate*** from Jan1995-June 1996 at NPL, New Delhi

6. Worked as ***Lecturer*** at DDUC College, Delhi University, Delhi-45, India, from July 1994 to April 1995.

Awards and Prizes:

1. Scroll of merit by the Indian Cryogenics Council for best work of the year 1990 on ***"Developments of High-Tc rf-SQUIDs"***

Current Research Projects:

1. Studies of planar nanowire arrays as basis for new generations of ICT devices. Science Foundation Ireland Funded Project. Co-Investigator

    - Magnetic nanostrutcure growth on vicinal templates
    - Nano-engineering the magnetic domain walls constrained by nanowires

2. Electronic structure and magnetic moment investigation of magnetic nanosturctures using XMCD (Collaboration with ESRF)

Research Publications:

- In Peer-reviewed Journals: 72
- Patents: 2

Membership of professional societies:

1. Materials Research Society
2. IEEE Magnetic Society (UK and RI Chapter)

Research Accomplishments

In my research career, I have been actively engaged in pursuing research in the area of condensed matter physics in its various disciplines and gained experience on nanoscale magnetism, hetero-epitaxial magnetic oxides, magnetic nanostructures and exposure to various thin film growth, material synthesis, nanofabrication and characterization techniques. I published more than 72 research papers in the peer reviewed journals. My work has been site for 902 (1179) time and h-index is 16 (20) as per *ISI Web of Science* (*Google Scholar*) index.

Focus of my current research over the past decade has been on the following topics:

1. Engineering nanoscale defects in magnetic and non-magnetic matrix
2. Fabrication and characterization of planar magnetic NW arrays for spin-transport and magnetic interactions.
3. Understanding the role of hetero-interfaces on magnetic and spin transport properties of metal/oxide and oxide/oxide interfaces.
4. Oxide based magnetic tunnel junctions

List of Publications:

Patents:

1. Magnetoresistive medium including a vicinally treated substrate,
   Shvets I. V., Arora S. K., and Sofin R. G, S., Irish patent,
   PCT/IE04/00034
   Date awarded: 14th Sept. 2006

2. 2008Magnetoresistive medium including nanowires
   Shvets I. V., Arora S. K., and Sofin R. G, S.,
   United States Patent 7,459,222 , December 2, 2008

Significant Publications since 2005:

1. Magnetization reversal behaviour of planar magnetic nanowire arrays of Fe
   S.K. Arora, B.J. O'Dowd, P. Thakur, N.B. Brookes, B. Ballesteros, P. Gambardella, and I.V. Shvets
   Current Nanoscience 9, 6.13 (2013)
   Journal Citation Impact Factor: **1.35**

2. Magnetic properties of planar nanowire arrays of Co fabricated on oxidized step-bunched silicon templates
   Arora S. K., O'Dowd B. J., Ballesteros B., Gambardella P., and Shvets I. V.
   NANOTECHNOLOGY 23, 235702 (2012)

3. Positive antiphase boundary domain wall magnetoresistance in Fe_3O_4 (110) heteroepitaxial films
   Sofin, R. G. **Arora S.K., and** Shvets, I. V.
   PHYSICAL REVIEW B 83, 134436 (2011)

4. Magnetic properties of planar arrays of Fe-nanowires grown on oxidized vicinal silicon (111) templates
   Arora S.K., O'Dowd, B. J., McElligot, P. C., Shvets, I. V., Thakur, P., and Brookes, N. B.
   JOURNAL OF APPLIED PHYSICS 109, 07B106 (2011)

5. Two-Dimensional Nanosheets Produced by Liquid Exfoliation of Layered Materials
   Coleman, Jonathan N., Lotya, Mustafa, O'Neill, Arlene, Bergin, Shane D., King, Paul J., Khan, Umar, Young, Karen, Gaucher, Alexandre, De, Sukanta, Smith, Ronan J., Shvets, Igor V., **Arora, Sunil K**, Stanton, George, Kim, Hye-Young, Lee, Kangho, Kim, Gyu Tae, Duesberg, Georg S., Hallam, Toby, Boland, John J., Wang, Jing Jing, Donegan, John F., Grunlan, Jaime C., Moriarty, Gregory, Shmeliov, Aleksey, Nicholls, Rebecca J., Perkins, James M., Grieveson, Eleanor M., Theuwissen, Koenraad, McComb, David W., Nellist, Peter D., Nicolosi, Valeria
   SCIENCE 331, 568 (2011)

6. Strain relaxation in $Fe_3O_4/MgAl_2O_4$ heterostructures: Mechanism for formation of antiphase boundaries in an epitaxial system with identical symmetries of film and substrate
   Luysberg, M., Sofin, R. G. S., **Arora S.K.**, Shvets, I. V.
   PHYSICAL REVIEW B 80, 024111 (2009)

7. Concept of a nanowire array magnetoresistance device
   Shvets, I. V., Wu, H. C., Usov, V., Cuccureddu, F., **Arora S.K.**, Murphy, S.
   APPLIED PHYSICS LETTERS 92, 023107 (2008)

8. Giant magnetic moment in epitaxial Fe_3O_4 thin films on MgO(100)
   Arora S.K., Wu, H. C., Choudhary, R. J., Shvets, I. V., Mryasov, O. N., Yao, H. Z., and Ching, W. Y.
   PHYSICAL REVIEW B 77, 134443 (2008)

9. Antiferromagnetic interlayer exchange coupling between Fe_3O_4 layers across a nonmagnetic MgO dielectric layer
   Wu, H. C., **Arora S.K.**, Mryasov, O. N., and Shvets, I.V.
   APPLIED PHYSICS LETTERS 92, 182502 (2008)

10. Anomalous anisotropic magnetoresistance in epitaxial Fe_3O_4 thin films on MgO(001)
    Ramos, R., **Arora S.K.**, and Shvets, I.V.
    PHYSICAL REVIEW B 78, 214402 (2008)
11. Observation of antiferromagnetic coupling in epitaxial ferrite films
    Knittel, I., Wei, J., Zhou, Y., **Arora S.K.**, Shvets, I. V., Luysberg, M., and Hartmann, U.
    PHYSICAL REVIEW B 74, 132406 (2006)

12. Magnetoresistance enhancement in epitaxial magnetite films grown on vicinal substrates
    Arora S.K., Sofin, R. G. S., and Shvets, I. V.
    PHYSICAL REVIEW B 72, 134404 (2005)

Paper in refereed journals (International)

1. Evidence for Spin glass state of NdCo1-xNixO3 (x =0.3-0.5)
   Vinod Kumar, R. Kumar, K. Singh, S. K. Arora, I. V. Shvets *and Ravi Kumar*
   J. Appl.Phys. (In press) (2014)
   Journal Citation Impact Factor: **2.17**

2. Magnetization reversal behaviour of planar magnetic nanowire arrays of Fe
   S.K. Arora, B.J. O'Dowd, P. Thakur, N.B. Brookes, B. Ballesteros, P. Gambardella, and I.V. Shvets
   Current Nanoscience 9, 6.13 (2013)
   Journal Citation Impact Factor: **1.35**

3. Observation of out-of-plane unidirectional anisotropy in MgO-capped Planar Nanowire Arrays of Fe
   S.K. Arora, B.J. O'Dowd, D.M. Polishchuk, A.V. Tovstolytkin, P. Thakur, N.B. Brookes, B. Ballesteros, P. Gambardella, and I.V. Shvets,
   J. Appl.Phys. 114, 133903 (2013)
   Journal Citation Impact Factor: **2.17**

4. **S. K. Arora**, B. O'Dowd, B. Ballesteros, P. Gambardella, and I. V. Shvets, Magnetic properties of planar nanowire arrays of Co fabricated on oxidized step-bunched silicon templates, NANOTECHNOLOGY vol. 23, art no. 235702 (7 pages), 2 012.
   Journal Citation Impact Factor: **3.98**

5. V. Kumar, Y. Kumar, R. Kumar, D. K. Shukla, **S. K. Arora**, I.V. Shvets, and R. Kumar., Structural, magnetic and x-ray absorption studies of $NdCo_{1-x}Ni_xO_3$ ($0 \leq x \leq 0.5$)" JOURNAL OF APPLIED PHYSICS vol. 113, art. no. 043918 (6 pages), 2013
   Journal Citation Impact Factor: **2.17**

6. O. Lubben, S. A. Krasnikov, A. B. Preobrajenski, B. E. Murphy, S. I. Bozhko**, S. K**. **Arora,** and I.V. Shvets , Self-assembly of Fe nanocluster arrays on templated surfaces, JOURNAL OF APPLIED PHYSICS vol. 111, art. no. 07B515 (3 pages), 2012.
   Journal Citation Impact Factor: **2.17**

7. **S. K. Arora,** B. J. O'Dowd, C. Nistor, T. Balashov, B. Ballesteros, A. Lodi Rizzini, J. J. Kavich, S. S. Dhesi, P. Gambardella, and I. V. Shvets, Structural and magnetic properties of planar nanowire arrays of Co grown on oxidized vicinal silicon (111) templates, JOURNAL OF APPLIED PHYSICS vol. 111, art. no. 07E342 (3 pages), 2012.
   Journal Citation Impact Factor: **2.17**

8. R. G. Sofin, **S. K. Arora,** and I. V. Shvets, Positive antiphase boundary domain wall magnetoresistance in Fe_3O_4 (110) heteroepitaxial films, PHYSICAL REVIEW B vol. 83, art. no. 134436 (9 pages), 2011.
   Journal Citation Impact Factor: **2.17**

9. J. N. Coleman, M. Lotya, A. O'Neill, S. D. Bergin, P. J. King, U. Khan, K. Young, A. Gaucher, S. De, R. J. Smith, I. V. Shvets, **S. K.** A**rora,** G. Stanton, Hye-Young Kim, , K. Lee, G. T. Kim, G. S. Duesberg, T. Hallam, J. J. Boland, J. J. Wang, J. F. Donegan, J. C. Grunlan, G. Moriarty, A. Shmeliov, R. J. Nicholls, J. M. Perkins, E. M. Grieveson, K. Theuwissen, D. W. McComb, P. D. Nellist, and V. Nicolosi, Two-Dimensional Nanosheets Produced by Liquid Exfoliation of Layered Materials, SCIENCE vol. 331, pp. 568-571, 2011.
   Journal Citation Impact Factor: **31.20**

10. N. E. Rajeevan, R. Kumar, D. K. Shukla, R. J. Choudhary, P. Thakur, A. K. Singh, S. Patnaik, **S. K. Arora,** I. V. Shvets, and P. P. Pradyumnan,

Magnetoelectric behavior of ferrimagnetic $Bi_xCo_{2-x}MnO_4$ (x=0, 0.1 and 0.3) thin films, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, vol. 323, pp. 1760, pp 1760-1765, 2011.
Journal Citation Impact Factor: **1.4**

11. **S. K. Arora,** B. J. O'Dowd, P. C. McElligot, I. V. Shvets, P. Thakur, and N. B. Brookes, Magnetic properties of planar arrays of Fe-nanowires grown on oxidized vicinal silicon (111) templates, JOURNAL OF APPLIED PHYSICS vo. 109, art. no. 07B106 (3 pages), 2011.
Journal Citation Impact Factor: **2.17**

12. V. O. Golub, V. V. Dzyublyuk, A. I. Tovstolytkin, **S. K. Arora,** R. Ramos, R. G. Sofin, and I. V. Shvets, Influence of miscut direction on magnetic anisotropy of magnetite films grown on vicinal MgO (100), JOURNAL OF APPLIED PHYSICS vol. 107, art. no. 09B108 (3 pages), 2010.
Journal Citation Impact Factor: **2.17**

13. R. Ramos, **S. K. Arora,** and I. V. Shvets, Influence of miscut on the anisotropic magnetoresistance of magnetite thin films, JOURNAL OF APPLIED PHYSICS vol. 105, art. no. 07B108 (3 pages), 2009.
Journal Citation Impact Factor: **2.17**

14. P. Thakur, R. Kumar, J. C. Cezar, N. B. Brookes, A. Sharma, **S. K. Arora,** S. Gautam, A. Kumar, K. H. Chae, and I. V. Shvets, Evolution of magnetic nanophases of Ni embedded in Al_2O_3 (001) matrix by X-ray magnetic circular dichroism, CHEMICAL PHYSICS LETTERS vol. 501, art. no. 404 (5 pages), 2011.
Journal Citation Impact Factor: **2.4**

15. J. M. Caicedo, **S. K. Arora,** R. Ramos, I. V. Shvets, J. Fontcuberta,and G.Herranz, Large magnetorefractive effect in magnetite, NEW JOURNAL OF PHYSICS vol. 12, art. no. 103023(9 pages), 2011.
Journal Citation Impact Factor: **4.17**

16. N. E. Rajeevan, R. Kumar, D. K. Shukla, P. P. Pradyumnan, **S. K. Arora,** I. V. Shvets, Structural, electrical and magnetic properties of Bi-substituted Co_2MnO_4, MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL SOLID-STATE MATERIALS vol. 163, pp. 48-56, 2009.
Journal Citation Impact Factor: **1.76**

17. M. Luysberg, R. G. S. Sofin, **S. K. Arora,** and I. V. Shvets, Strain relaxation in $Fe_3O_4/MgAl_2O_4$ heterostructures: Mechanism for formation of antiphase boundaries in an epitaxial system with identical symmetries of film and substrate, PHYSICAL REVIEW B vol. 80, art. no. 024111(5 pages), 2009.
Journal Citation Impact Factor: **3.69**

18. N. E. Rajeevan, R. Kumar, D. K. Shukla, P. Thakur, N. B. Brookes, K. H. Chae, W. K. Choi, S. Gautam, **S. K. Arora,** I. V. Shvets, and P. P. Pradyumnan, Bi-substitution-induced magnetic moment distribution in spinel $Bi_xCo_{2-x}MnO_4$ multiferroic, JOURNAL OF PHYSICS-CONDENSED MATTER vol. 21,art. no. 406006 (6 pages), 2009.

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19. R. Kumar, **S. K. Arora,** I. V. Shvets, N. E. Rajeevan, P. P. Pradyumnan, D. K. Shukla, Structural and transport properties of Bi-substituted Co_2MnO_4, JOURNAL OF APPLIED PHYSICS vol. 105, art. no. 07D910 (3 pages), 2009.
Journal Citation Impact Factor: **2.17**

20. I.V. Shvets, H. C. Wu, V. Usov, F. Cuccureddu, **S. K. Arora,** S .Murphy, Concept of a nanowire array magnetoresistance device, APPLIED PHYSICS LETTERS vol. 92, art. no. 023107 (3 pages), 2008.
Journal Citation Impact Factor: **3.84**

21. N. E. Rajeevan, P. P. Pradyumnan, R. Kumar, D. K. Shukla, S. Kumar, A. K. Singh, S. Patnaik, S. K. **Arora,** and I. V. Shvets, Magnetoelectric properties of $Bi_xCo_{2-x}MnO_4$ ($0 <= x <= 0.3$), APPLIED PHYSICS LETTERS vol. no. 92, art. no. 102910 (3pages), 2008.
Journal Citation Impact Factor: **3.84**

22. M. Kallmayer, K. Hild, H. J. Elmers, **S. K. Arora,** H. C. Wu, R. G. S. Sofin, and I. V. Shvets, Magnetic moment investigations of epitaxial magnetite thin films, JOURNAL OF APPLIED PHYSICS vol. 103, art. no. 07D715 (3 pages), 2008.
Journal Citation Impact Factor: **2.17**

23. **S. K. Arora,** H. C. Wu, R. J. Choudhary, I. V. Shvets, O. N. Mryasov, H. Z. Yao, and W. Y. Ching, Giant magnetic moment in epitaxial Fe_3O_4 thin films on MgO(100), PHYSICAL REVIEW B vol. 77, art. no. 134443 (5 pages), 2008.
Journal Citation Impact Factor: **3.69**

24. R. J. Choudhary, R. Kumar, M. W. Khan, J. P. Srivastava, S. I. Patil, **S. K. Arora,** and I. V. Shvets, Modifications of the structural, electrical and magnetic properties of $LaFe_{0.5}Ni_{0.5}O_3$ thin films by 190 MeV Ag ion irradiation, NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS vol. 266, pp. 1611-16, 2008.
Journal Citation Impact Factor: **1.07**

25. H. C.Wu, **S. K. Arora,** O. N. Mryasov, and I. V. Shvets, Antiferromagnetic interlayer exchange coupling between Fe_3O_4 layers across a nonmagnetic MgO dielectric layer, APPLIED PHYSICS LETTERS vol. 92, art. no. 182502 (3 pages), 2008.
Journal Citation Impact Factor: **3.84**

26. A. Koblischka-Veneva, M. R. Koblischka, S. Murphy, **S. K. Arora,** F. Mucklich, U. Hartmann, and I. V. Shvets, Microtexture of magnetite thin films of (001) and (111) orientations on MgO substrates studied by electron-backscatter diffraction, JOURNAL OF APPLIED PHYSICS vol. 103, art. no. 07E505 (3 pages), 2008.
Journal Citation Impact Factor: **2.17**

27. M. W. Khan, R. Kumar, J. P. Srivastava, S. K. **Arora,** R. J. Choudhary, and I. V. Shvets, 1/f noise studies of swift heavy ion irradiated magnetite thin films, NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS vol. 266, pp. 1719-1722, 2008.
Journal Citation Impact Factor: **1.07**

28. L. McGuigan, R. C. Barklie, R. G. S. Sofin, **S. K. Arora,** and I. V. Shvets, In-plane magnetic anisotropies in Fe_3O_4 films on vicinal MgO(100), PHYSICAL REVIEW B vol. 77, art. no. 174424 (9 pages), 2008.
Journal Citation Impact Factor: **3.69**

29. K. Hild, J. Maul, T. Meng, M. Kallmayer, G. Schronhense, H. J. Elmers, R. Ramos, **S. K. Arora,** and I. V. Shvets, Optical magnetic circular dichroism in threshold photoemission from a magnetite thin film, JOURNAL OF PHYSICS-CONDENSED MATTER vol. 20, 235218 (5 pages) 2008.
Journal Citation Impact Factor: **2.54**

30. R. Ramos, **S. K. Arora,** and I. V. Shvets, Anomalous anisotropic magnetoresistance in epitaxial Fe_3O_4 thin films on MgO(001), PHYSICAL REVIEW B vol. 78, 214402 (7 pages), 2008.
Journal Citation Impact Factor: **3.69**

31. **S. K. Arora,** Wu, H. C., Yao, H. Z., Ching, W. Y., Choudhary, R. J., Shvets, I..V., and Mryasov, O.N., Magnetic Properties of Ultrathin Magnetite Films Grown by Molecular Beam Epitaxy, Proceeding of INTERMAG 2008 Conference, Madrid, 2008. IEEE TRANSACTIONS ON MAGNETICS vol. 44, pp. 2628-2631, 2008.
Journal Citation Impact Factor: **1.42**

32. R. G. S. Sofin, **S. K. Arora,** and Shvets, Title: Influence of substrate pre-deposition annealing on step edges-induced magnetoresistance in epitaxial magnetite films grown on vicinal MgO (100) substrates, Proceedings of the Joint European Magnetic Symposia, San Sebastian, Spain, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS vol. 316,art. no. E969 (4 pages), 2007.
Journal Citation Impact Factor: **1.4**

33. A Koblischka-Veneva, M. R. Koblischka, S. Murphy, **S. K. Arora,** U. Hartmann, F. Mucklich, and I. V. Shvets, EBSD analysis of the growth of (001) magnetite thin films on MgO substrates, MATERIALS SCIENCE AND ENGINEERING B-SOLID STATE MATERIALS FOR ADVANCED TECHNOLOGY vol. 144, pp. 64-68, 2007.
Journal Citation Impact Factor: **1.76**

34. **S. K. Arora,** R. G. S. Sofin, I. V. Shvets, and M. Luysberg, Anomalous strain relaxation behavior of Fe_3O_4/MgO (100) heteroepitaxial system grown using molecular beam epitaxy, JOURNAL OF APPLIED PHYSICS vol. 100, art. no. 073908 (8 pages), 2006.
Journal Citation Impact Factor: **2.17**

35. I Knittel, J. Wei, Y. Zhou, **S. K. Arora,** I. V. Shvets, M. Luysberg, and U. Hartmann, Observation of antiferromagnetic coupling in epitaxial ferrite films, PHYSICAL REVIEW B vol. 74, art. no. 132406 (4 pages), 2006.
Journal Citation Impact Factor: **3.69**

36. R. Kumar, M. W. Khan, J. P. Srivastava, **S. K. Arora,** R. G. S. Sofin, R. J. Choudhary, and I. V. Shvets, Swift heavy ion irradiation-induced modifications in structural, magnetic and electrical transport properties of epitaxial magnetite thin films, JOURNAL OF APPLIED PHYSICS vol. 100, art. no. 033703 (pages 6), 2006.
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37. **S. K. Arora,** R. G. S. Sofin, A. Nolan, and I. V. Shvets, Antiphase boundaries induced exchange coupling in epitaxial Fe_3O_4 thin films, JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS vol. 286, pp. 463-467, 2005.
Journal Citation Impact Factor: **1.4**

38. **S. K. Arora,** R. G. S. Sofin, and I. V. Shvets, Magnetoresistance enhancement in epitaxial magnetite films grown on vicinal substrates, PHYSICAL REVIEW B vol. 72, art. no. 134404 (10 pages), 2005.
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39. **S. K. Arora,** R. G. S. Sofin, I. V. Shvets, R. Kumar, M. W. Khan, and J. P. Srivastava, Influence of antiphase boundary density on the conduction noise properties of epitaxial magnetite thin films, JOURNAL OF APPLIED PHYSICS vol. 97, art. no. 10C310 (3 pages), 2005.
Journal Citation Impact Factor: **2.17**

40. R. J. Choudhary, R. Kumar, M. W. Khan, J. P. Srivastava, S.I. Patil, **S.K. Arora,** and I.V. Shvets, Exposition of semiconducting and ferromagnetic properties of pulsed-laser-deposited thin films of $LaFe_{1-x}Ni_xO_3$ (x=0.3, 0.4, and 0.5), APPLIED PHYSICS LETTERS vol. 87, art. no. 132104 (3 pages),2005.
Journal Citation Impact Factor: **3.84**

41. R. G. S. Sofin, **S. K. Arora,** and I. V. Shvets, Study of magnetoresistance of epitaxial magnetite films grown on vicinal MgO(100) substrate, JOURNAL OF APPLIED PHYSICS vol. 97, art. no. 10D315 (3 pages), 2005.
Journal Citation Impact Factor: **2.17**

42. K. Balakrishnan, **S. K. Arora,** and I. V. Shvets, Strain relaxation studies of the Fe_3O_4/MgO(100) heteroepitaxial system grown by magnetron sputtering, JOURNAL OF PHYSICS-CONDENSED MATTER vol. 16, pp. 5387(7 pages)2004.
Journal Citation Impact Factor: **2.54**

43. S.K. Arora, R.G.S. Sofin, A. Nolan and I.V. Shvets, Antiphase boundaries induced exchange coupling in epitaxial Fe3O4 films, J. Magnetism and Magnetic Materials, 286, 463 (4 pages), 2005.
Journal Citation Impact Factor: **1.4**

44. K. Kono, **S. K. Arora,** and N. Kishimoto, Modification in optical properties of negative Cu ion implanted ZnO, NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS vol. 206, pp. 291-294, 2003.
Journal Citation Impact Factor: **1.07**

45. R. Singh,**S. K. Arora,** J. P. Singh, R. Tyagi, S. K. Agarwal, D. Kanjilal, In situ resistivity studies of 200 MeV Ag ion irradiated n-GaAs epitaxial layers,

VACUUM vol. 65, pp. 39-43, 2002.
Journal Citation Impact Factor: **1.20**

46. B. Angadi, V. M. Jali, M. T. Lagare, N. S. Kini, A. M. Umarji, R. Kumar, **S. K. Arora,** and D. Kanjilal, 50 MeV Li^{3+} irradiation effects on the thermal expansion of $Ca_{1-x}Sr_xZr_4P_6O_{24}$, NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B vol. 187, pp. 87-94, 2002.
Journal Citation Impact Factor: **1.07**

47. A. P. G. Prakash, K. C. P. Ganesh, Y. N. Nagesha, D. Umakanth, S**. K. Arora,** and K. Siddappa, Effect of 30 MeV Li^{3+} ion and 8 MeV electron irradiation on N-channel MOSFETs, RADIATION EFFECTS AND DEFECTS IN SOLIDS vol. 157, pp. 323-332, 2002.
Journal Citation Impact Factor: **0.7**

48. R. Singh, **S. K. Arora,** J. P. Singh, and D. Kanjilal, In situ current-voltage characterization of swift heavy ion irradiated Au/n-GaAs Schottky diode at low temperatures, RADIATION EFFECTS AND DEFECTS IN SOLIDS vol. 157, pp. 367-374, 2002.
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49. R. Singh, **S. K. Arora,** J. P. Singh, R. Tyagi, S. K. Agarwal, and D. Kanjilal, Experimental investigation of 200 MeV Ag ion induced modifications in n-GaAs epitaxial layer by in situ resistivity and Hall measurements, MATERIALS SCIENCE AND ENGINEERING B vol. 86, pp. 228-231, 2001.
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50. R. Singh,**S. K. Arora,** and D. Kanjilal, Swift heavy ion irradiation induced modification of electrical characteristics of Au/n-Si Schottky barrier diode, MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING vol. 4, pp. 425-432, 2001.
Journal Citation Impact Factor: **NA**

51. **S. K. Arora,** R. Kumar, R. Singh, D. Kanjilal, G. K. Mehta, R. Bathe,S. I. Patil, and s. B. Ogale, Electronic transport and 1/f noise studies in 250 MeV Ag ion irradiated $La_{0.75}Ca_{0.25}MnO_3$ thin films, JOURNAL OF APPLIED PHYSICS vol. 86, pp. 4452-4457, 1999.
Journal Citation Impact Factor: **2.17**

52. J. P. Singh, R. Singh, S. Ghosh, A. Tripathi, D. Kabiraj, S. Gupta, T. Som, R. Kumar, **S. K. Arora,** K. Asokan, D. K. Avasthi, D. Kanjilal, N. C. Mishra, and G. K. Mehta, Swift heavy ion-based materials science research at NSC NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B vol. 156, pp. 206-211 (1999)
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