BIO-DATA

of

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CURRICULAM VITAE

MANJUNATHA PATTABI

Born - 1st October, 1961, Napoklu, Coorg, Karnataka

Educational - M.Sc., Mangalore, 1983 ; Ph.D., I.I.T., Madras, 1988

Employment : At Mangalore University since 1988 as Lecturer
At Mangalore University since 1995 as Reader
At CIE –UNAM, Mexico, 1999-2000 as Visiting Professor
At Mangalore University since Apr. 2003 as Professor and Chairman of Materials Science Dept.:
From Oct. 2003 to Dec. 2009
From Jan 2012 to Dec 2013
From March 2015 and continuing

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Recognitions : Invited to be the Visiting Associate of Inter University Consortium for DAE Facilities since 1995 till 1999
Sir C V Raman Young Scientist Award -2002 by the Karnataka State Council for Science and Technology, Govt. of Karnataka
MRSI Medal-2014 by the Materials Research Society of India

Summary of research activities

Areas of Interest: Thin Films, Nanoparticles of metals and Semiconductors, Shape Memory alloys, Fuel Cells, Solar Cells.

Instabilities of island metal films: Explored aging in island films through the electrical resistance measurement as a function of time. Characterization of island films was done by I-V measurements and TCR studies. An aging rate was defined through the evaluation of tunneling length during aging. Proposed a model to determine the time evolution of the average inter-island spacing, surface coverage and island density from aging. Effect of various growth parameters such as electric field, magnetic field, substrate temperature, softened substrates, ultrasonic vibration and ion bombardment cleaning of the substrates etc. on the aging in Cu and Ag island films were studied to understand the mechanism of aging. Obtained clear evidence for the mobility coalescence of silver islands as responsible for aging, through aging experiments in UHV. An insulator-metal transition in a conservative system was observed for the first time, which gave conclusive evidence for the mobility coalescence of islands.

Subsurface particulate structures: Subsurface particulate structures can be formed by the vacuum deposition of inorganic materials onto polymer substrates held at temperatures above glass transition temperature. The effect of deposition parameters as well as polymer metal interaction on the structure of particulate silver films deposited on soft polymer substrates were studied. A discontinuous film strain gauge fabricated with an excellent gauge factor of about 45, showed stability for more than 120 days. As polymer metal interaction is found to be an important factor in determining the morphology of the subsurface particulate structure, tuning this interaction through different routes like blending of the polymers, irradiation of the polymers, doping with

organosilanes etc., to tailor the morphology and hence their properties, have been investigated. Two dimensional nature of the sub-surface particulate structures were shown by Rutherford Backscattering (RBS) technique.

Nanoparticles: We have successfully synthesized CdS nanoparticles using a novel technique using a Chicken egg membrane. Nanoparticles could be synthesized without the help of any capping agent, through the diffusion of precursors across the membrane, which were found to be stable for over 90 days. CdS nanoparticles with various capping agents were synthesized and found that only PVP capped CdS nanoparticles could be embedded in PVA matrix without sacrificing the optical properties.

We have also synthesized silver nanoparticles through a radiological route without the use of any harsh chemicals. The antibacterial properties of these silver nanoparticles have also been studied. The TSA capped gold nanoparticles exhibited reasonably good luminescence properties and it is attributed to a mechanism involving Interface Electron Energy Band (IEEB).

Shape Memory Alloys: NiTi based SMAs are being investigated to understand the effect of various cycling the material undergoes during its use in any application. We have shown that even the strain induced during mechanical cutting and polishing can change the transformation characteristics of NiTi Shape Memory Alloys significantly. It is shown that even in severely cold worked (25%) NiTi, shape memory effect could be completely recovered with appropriate heat treatment.

Semiconductor Thin Films and Devices: Semiconductor thin films having potential for various applications were studied. Amorphous-crystalline transition in as-grown antimony telluride films were studied using electrical conductivity, Seebeck coefficient and X-ray and electron diffraction techniques. Solar control characteristics of copper selenide films were evaluated. Electroless/electro-deposition of semiconductor films for solar cell applications is another area of research which we are pursuing. The effect of 8 MeV electron irradiation on CdTe based Schottky devices and solar cells were studied and compared with silicon devices for evaluation of radiation resistance of thin film devices. The polycrystalline CdTe thin film based devices were found to be more radiation resistant as compared to the single crystalline silicon devices.

Fuel Cells: We have initiated research on PEM based hydrogen fuel cells. We have shown the potential of tungsten carbonyl compound as a catalyst for oxygen reduction reaction.

Rare Earth Oxide Thin Films: Work is initiated on Rare earth oxide thin films for high k dielectrics applications. Good quality Gd_2O_3 could be prepared by RF sputtering and nitrogen annealed films showed good radiation resistance.

Related experience: Extensive experience in HV and UHV systems. Wide knowledge of characterization techniques such as SEM, XPS, TEM, XRD, AFM and Spectrophotometry for the physical and chemical characterization of thin films.

Completed Research Projects:

Principal Investigator for the project "Preparation and Characterization of Stable Island

Films" funded by the Department of Science and Technology, Govt. of India.
Grant: Rs. 6,25,000/-
The important outcome of the project is given earlier in summary of research activities under subsurface particulate structures

Co-Investigator for the Project "Establishment of a centre for excellence in radiation and radiological sciences" funded by Board of Research in Nuclear Sciences, Department of Atomic Energy, Govt. of India.
Grant: Rs. 65,00,000/-

Co-Investigator for the Project "R & D using Variable Energy Microtron: Establishment of a National Facility" funded by Department of Science and Technology, Govt. of India.
Grant: Rs. 91,38,413/-
The important outcome of these two projects is given earlier in summary of research activities under Semiconductor thin films and devices

Principal Investigator for the project "Materials Analysis and Characterization using powder X- Ray Diffractometer" funded by Department of Science and Technology, Govt. of India.
Grant: Rs. 68,75,000/-
The important outcome of the project is given in summary of research activities under Shape Memory Alloys

Principal Investigator for the project "Modification of Morphology of Silver Particulate Films on Polymer Substrate by Electron beam and Photon Irradiation" funded by Board of Research in Nuclear Sciences, Dept. of Atomic Energy, Govt. of India.
Grant: Rs. 7,50,000/-

Principal Investigator for the project "Effect of cold work and thermal cycling on the characteristics of Shape Memory Alloys" funded by Department of Science and Technology, Govt. of India.
Grant: Rs. 34,87,000/-

Principal Investigator for the project " Evaluation of Radiation Resistance of Rare Earth Oxide Thin Films" funded by Board of Research in Nuclear Sciences, Dept. of Atomic Energy, Govt. of India.
Grant: Rs. 19,546,900/-

Thesis guided:

1. Master of Philosophy (M.Phil.)
   Jayasheela Uchil , Island Silver Films, Mangalore University, India, 1996

2. Doctor of Philosophy (Ph.D.)
   K.Mohan Rao, Preparation and Characterization of Sub-surface Particulate Films, Mangalore University, India, 2000
   Jayasheela Uchil, Synthesis and Characterization of Cadmium Sulphide Nanoparticles, Mangalore University, India 2003
   Saraswathi Amma B, Synthesis and Characterization of CdS Nanoparticles with Organic and Inorganic Stabilisers, Mangalore University, India 2008

Sheeja Krishnan, Electron Irradiation Effects in Silicon and Cadmium Telluride Devices, Mangalore University, India, 2009
Ramakrishna K, Studies on Phase Transformationsin NiTi Shape Memory Alloy, Mangalore University, India, 2013
Gurumurthy S C, Modification of Morphology of Silver Particulate Films on Polymer Substrate by Electron Beam Irradiation, Mangalore University, India, 2013
Asha Kiran, Effect of 8 MeV Electron Irradiationon CdTe,CdMgTe and CIGS Thin Film solar Cells, Mangalore University, India, 2014.
Narendra D Naik, Organization of Metal Clusters on Modified Inert Polymer Substrates, Mangalore University, India, 2015.

3. Bachelor of Science (Licenciatura en Fisica)
   Roger Castillo Palomera, Desarrollo y Caracterizacion de un Ensemble de Membrana-Electrodo basado en $W_x(CO)_n$ /Pt para su Applicacion en una Celda de Combustible, University of Tabasco, Mexico, 2000

Four students are working at present for their Ph.D. degrees

Visits Abroad:

1. The Chinese University of Hong Kong (1988)
2. National University of Singapore (1988)
3. Laboratorio TASC, Trieste, Italy* and II University of Rome, Italy* (1991)
4. CNRS, Grenoble, France* (1991)
5. Max-Planck Institute, Stuttgart, Germany* (1991)
6. National Autonomous University of Mexico*(1999)

(* Delivered lectures)

Conferences organized:

1. Member, Organizing Committee, International Symposium on Advances in Superconductivity and Magnetism: Materials, Mechanics and Devices, (ASMM2D 2001) Mangalore, India, 2001

Member of International Conference Committee:

1. Member, International Committee, International Symposium on Solar Hydrogen Fuel Cells, (XI International Materials Research Conference), Cancun, Mexico, 2001

2. Member, International Committee, International Symposium on Solar Hydrogen Fuel Cells, (XII International Materials Research Conference), Cancun, Mexico, 2002 (and in 2008)

3. Member, International Committee, International Symposium on Progress In Ceramic Base Composite Materials, (XII International Materials Research Conference), Cancun, Mexico, 2002

4. Member, Organizing & International Committee, Materials Development in Liquid Crystal & Electroluminescent Displays (XII International Materials Research Conference), Cancun, Mexico, 2002

5. Member, International Committee, International Symposium on Solar Cells & Solar Energy Materials (International Materials Research Conference, IMRC 2003) Cancun, Mexico Aug., 17-21, 2003 (continued to be a member till 2007)

6. Member, International Advisory Committee, Internatioanl Conference on Recent Trends in Materials and Characterization, RETMAC – 2010, Surathkal, India, 14-15 Feb, 2010

Refresher Course Organized:

Organized the XIV Refresher Course in Experimental Physics, Directed by Prof R Srinivasan, through the funding from Indian Academy of Sciences, National Academy of Sciences and Indian National Science Academy, June 1-16, 2009

Seminar Organized:

Organized a Seminar on Advances in Materials Science, Nov 2013.

Referee for journals:

1. J. Physics C
2. J. Phys. D
3. Semiconductor Science and Technology
4. Solar Energy Materials and Solar Cells
5. Philosophical Magazine
6. Materials Chemistry and Physics
7. Materials Science and Engineering A
8. Nanotechnology
9. Surface Coatings Technology
10. J. Colloid and Interface Science
11. Solar Energy
12. Int. J. Nanoparticles
13. Thin Solid Films
14. J. Alloys & Compounds
15. Spectrochemica Acta

Other professional contributions/Experience:

Member, Board of Studies in Materials Science, Mangalore University
Chairman, Board of Studies in Materials Science, Mangalore University*
Chairman, Composite Board of Studies in Engineering & Architecture, Mangalore University
Member Board of Studies in Materials Science, Kannur University
Member Board of Studies in Physics, Kuvempu University

Member Secretary, Academic and Administrative Audit Committee, Mangalore University*
Chairman, Annual Report Committee, Mangalore University
Member, Best College Magazine Selection Committee, Mangalore University
Member, Statutes Drafting Committee, Mangalore University
Chairman, Statutes Drafting Committee, Mangalore University*
Member, Purchase Committee, Mangalore University
Member, Canteen Advisory Committee, Mangalore University*
Chairman, NAAC report preparation Committee, Mangalore University.
Member, Internal Quality Assurance Cell, Mangalore University*
Coordinator, DST-PURSE Programme*
Member, Research and Recognition Committee, Nitte University*.
Member of Board of Examiners, paper setter and examiner, in Materials Science/Physics for M.Sc. & M.Phil. examinations of Mangalore University, Karnatak University, Gulbarga University, Mysore University, Kannur University, Cochin University of Science and Technology, Kuvempu University .

Examiner for Ph.D. of Mangalore University, Madurai Kamaraj University, Kerala University, Devi Ahilya Vishwavidyalaya, Osmania University, Karnatak University, Cochin University of Science and Technology, Pune University, Alagappa University, Indian Institute of Science.

Refereed Project proposals submitted to DST, BRNS, Kerala State Council for Science and Technology, National Science Foundation , Georgia.

List of Publications of Dr. Manjunatha Pattabi

PAPERS PUBLISHED IN REFEREED JOURNALS:

1. Aging and field effect studies of copper and copper/silver composite discontinuous films
   V.Damodara Das, M.S.Murali Sastry and **Manjunatha Pattabi**
   Physics Status Solidi A (Germany) **96** (1986) 677

2. Aging studies of discontinuous copper and silver films
   V.Damodara Das, M.S.Murali Sastry and **Manjunatha Pattabi**
   J. Mater. Sci (Chapman & Hall, UK) **22** (1987) 264

3. Effect of applied field and temperature on the aging of copper discontinuous films studied by repeated deposition technique
   V.Damodara Das, M.S.Murali Sastry and **Manjunatha Pattabi**
   J. Phys. D. (IOP, UK) **20** (1987) 215

4. Fabrication of a bath type cryostat for thin film studies at liquid nitrogen temperatures
   Manjunatha Pattabi, N.Ganesan, M.S.Murali Sastry, V.Damodara Das and V.Sivaramakrishnan
   J. Instr. Soc. (Instr. Soc. India) **17** (1987) 246

5. Electrical conductivity and thermoelectric power of amorphous antimony telluride thin films and amorphous- crystalline transition
   V.Damodara Das, N.Soundararajan and **Manjunatha Pattabi**

J. Mater. Sci. (Chapman & Hall, UK) **22** (1987) 3522

6. Aging and field effect studies on discontinuous silver films at near liquid nitrogen temperatures
   Manjunatha Pattabi, M.S. Murali Sastry, V. Damodara Das and V. Sivaramakrishnan
   J. Mater. Sci (Chapman & Hall, UK) **22** (1987) 4173

7. Repeated deposition studies of the occurrence of large scale coalescence and effect of electric field on the aging of island silver films.
   M.S. Murali Sastry, **Manjunatha Pattabi,** V.Damodara Das and V. Sivaramakrishnan
   Vacuum (Pergamon, UK) **38** (1988) 21

8. Time variation of the tunneling length in island Cu films studied by repeated deposition technique
   M.S. Murali Sastry**, Manjunatha Pattabi**
   J. Phys. D. (IOP, UK) **21** (1988) 223

9. Aging and field effect studies of Cu island films at near liquid nitrogen temperatures
   Manjunatha Pattabi, M.S.Murali Sastry and V.Sivaramakrishnan
   J. Appl. Phys. (AIP, USA) **63** (1988) 983

10. Studies on the stability of discontinuous silver films with overlayers of Al_2O_3 and SiO_2
    Manjunatha Pattabi, M.S.Murali Sastry and V.Sivaramakrishnan
    Physica Status Solidi A (Germany) **106** (1988) 145

11. Effect of overlayers on the instability of Cu island films
    Manjunatha Pattabi, M.S.Murali Sastry and V.Sivaramakrishnan
    J. Mater. Sci. (Chapman & Hall, UK) **23** (1988) 1502

12. Time variation of the interisland spacing at liquid nitrogen temperatures for Cu and Ag island films
    Manjunatha Pattabi and M.S.Murali Sastry
    Thin Solid Films (Elsevier) **159** (1988) L 61

13. Studies on the stability of Cu island films deposited on a softenable substrate
    Manjunatha Pattabi, M.S.Murali Sastry and V.Sivaramakrishnan
    J. Appl. Phys. (AIP, USA) **64** (1988) 437

14. Silver island films deposited on a substrate above its softening temperatures
    Manjunatha Pattabi, M.S.Murali Sastry and V.Sivaramakrishnan
    Phys. Rev. B (APS, USA) **39** (1989) 9959

15. Influence of ion bombardment cleaning on the aging rates in island copper films on fused quartz substrates
    M.S. Murali Sastry and **Manjunatha Pattabi**
    J. Appl. Phys. (AIP, USA) **65** (1989) 4073

16. Variation of the tunneling barrier in island Cu films
    M.S. Murali Sastry and **Manjunatha Pattabi**

Physica Status Solidi A (Germany) **114** (1989) K179

17. Influence of a magnetic field on the aging rates of island silver films
Manjunatha Pattabi, P.J. Sebastian and V. Sivaramakrishnan
J. Phys. D (IOP, UK) **23** (1990) 371

18. Structural information of island metal films from aging measurements
M.S. Murali Sastry and **Manjunatha Pattabi**
Phys. Rev. B. (APS, USA) **41** (1990) 8529

19. Solar Control Characteristics of Cu_2Se coatings
P.J. Sebastian and **Manjunatha Pattabi**
J.Phys. D (IOP, UK) **25** (1992) 981

20. Window Coating Prospects of Cu_2Se Thin Films
Manjunatha Pattabi, P.J. Sebastian and V. Sivaramakrishnan
SPIE (USA) **1523** (1992) 143.

21. The Effect of Magnetic Field on the Aging of Island Silver Films for Successive Depositions
Jayasheela Uchil, Mohan Rao K and **Manjunatha Pattabi**
J. Phys.D (IOP, UK) **29** (1996) 2992

22. The Effect of Substrate Vibration on the Mobility Coalescence in Silver Island Films
Manjunatha Pattabi, Jayasheela Uchil and Mohan Rao K
Thin Solid Films (Elsevier) **305** (1997) 196

23. Preparation and Characterization of Silver Particulate Films on Softened Polystyrene Substrates
K.Mohan Rao**, Manjunatha Pattabi**, K S Mayya, S R Sainkar and Murali Sastry
Thin Solid Films (Elsevier) **310** (1997) 97

24. Electrical Behaviour of Discontinuous Silver Films Deposited on Softened Polyvinylpyridine Substrates
Manjunatha Pattabi and K Mohan Rao
J.Phys.D. (IOP, UK) **31** (1998) 19

25. Aging Studies on Discontinuous Silver Films in Ultrahigh Vacuum.
Manjunatha Pattabi, N Suresh, S M Chaudhari, A Banerjee, D M Phase, A Gupta and K Mohan Rao
Thin Solid Films (Elsevier) **322** (1998) 340

26. Stability of Ag island films deposited on softened PVP substrates.
Manjunatha Pattabi and K.Mohan Rao
Ind.J.Phys. (IACS, India) **72A** (1998) 403

27. Effect of overlayers on the stability of discontinuous silver films deposited on softened PVP substrates.
Manjunatha Pattabi and K Mohan Rao
J.Phys.D. (IOP, UK) **31** (1998) 2412

28. Structural studies on silver cluster films deposited on softened PVP substrates.
Manjunatha Pattabi, K.Mohan Rao, S.R.Sainkar and Murali Sastry
Thin Solid Films (Elsevier) **338** (1999) 40

29. A simple strain cell for the measurement of the gauge factor of a thin film.
Manjunatha Pattabi and K Mohan Rao
Rev. Sci. Instr. (AIP, USA) **70** (1999) 2074

30. Modifications of power diode characteristics using Bremsstrahlung radiation from Microtron
Ganesh, K C Prashanth, Y N Nagesha, A P Gnanaprakash, D Umakanth, **Manjunatha Pattabi**, K Siddappa, Saji Salkalachen and Amitav Roy
Rad.Phy.Chem. (Pergamon-Elsevier) **55** (1999) 461

31. Dosimetry and semiconductor irradiation experiments using Microtron Facility
Ganesh, K C Prashanth, Y N Nagesha, A P Gnanaprakash, D Umakanth, **Manjunatha Pattabi,** K.Siddappa**,** Saji Salkalachen and Amitav Roy
Ind. J. Phys. (IACS, India) **73S** (1999) 777

32. Preparation and characterization of silver particulate structures deposited on softened poly(4-vinylpyridine) substrates
K Mohan Rao, **Manjunatha Pattabi**, S R Sainkar, Arun Lobo, S K Kulkarni, Jayasheela Uchil and Murali Sastry
J.Phys.D (IOP, UK) **32** (1999) 2327

33. Synthesis of Cadmium Sulphide Nanoparticles
Manjunatha Pattabi and Jayasheela Uchil;
Solar Energy Mater and Solar Cells (Elsevier) **63**(2000) 309

34. Preparation and Characterization of Copper Indium Diselenide films by Electroless deposition
Manjunatha Pattabi, P J Sebastian, X Mathew and R N Bhattacharya
Solar Energy Mater and Solar Cells (Elsevier) **63** (2000) 315

35. Charge Transport Mechanism in a Typical Au/CdTe Schottky diode
X. Mathew, J. Pantoja Enriquez, P. J. Sebastian, **M. Pattabi**, A. Sanchez Juarez , J. Campos, J.C.McClure and V.P.Singh
Solar Energy Mater and Solar Cells (Elsevier) **63** (2000) 355

36. A Novel Electrocatalyst Based on $W_x (CO)_n$ for Oxygen Reduction Reaction
M.Pattabi, R.H.Castellanos, P.J.Sebastian and X.Mathew
Electrochemical and Solid State Letters (Electrochem. Soc. USA) **3** (2000) 431

37. Synthesis and Characterization of $W_x (CO)_n$ Electrocatalyst for Application in a Fuel Cell Electrode
Manjunatha Pattabi, P J Sebastian and X Mathew
J. New Mater. For Electrochemical Systems (Canada) **4** (2001) 7

38. Photoelectrochemical Characterisation of SiC
P.J. Sebastian, N.R. Mathews, X. Mathew, **M. Pattabi** and J. Turner
Int.J.Hyd.Energy (Elsevier) **26** (2001) 123

39. Effect of Polymer- Metal interaction on the structure of silver particulate films formed on softened polymer substrates.
K.Mohan Rao and **Manjunatha Pattabi**
J. New Mater. For Electrochemical Systems (Canada) **4** (2001) 11

40 Electrochemical Characterization of Tungsten Carbonyl Compound for Oxygen Reduction Reaction
M. Pattabi, R.H. Castellanos, R. Castillo, A. L. Ocampo, P.J. Sebastian, J.C. McClure and X. Mathew
Int.J.Hyd.Energy (Elsevier) **26** (2001) 171

41. Insulator-Metal Transition in a Conservative System: an Evidence for Mobility Coalescence in Island Silver Films
Manjunatha Pattabi
Pramana (Ind.Aca.Sci. India) **58** (2002) 1141 (Cond-mat/0506022 14/06/2005, arXive)

42. The Effect of Precursor Concentration on the Size of the CdS Nanoparticles Synthesized in a Chicken Egg Membrane
Manjunatha Pattabi and Jayasheela Uchil
Solar Energy Mater and Solar Cells (Elsevier) **76** (2003) 323

43. Dielectric Studies on the Chicken Egg Membrane deposited with CdS Nanoparticles
Jayasheela Uchil, **Manjunatha Pattabi** and T. Shripathi
Solar Energy Mater and Solar Cells (Elsevier) **81** (2004) 313

44. Preparation and Characterization of CdS nanoparticles in an aqueous medium using chicken egg membrane.
Jayasheela Uchil and **Manjunatha Pattabi**
J. New Mater. For Electrochemical Systems (Canada) **8** (2005) 109

45. Effect of pH on the size of CdS nanoparticles synthesized by chemical diffusion across a Biological membrane
Jayasheela Uchil and **Manjunatha Pattabi**
J. New Mater. For Electrochemical Systems (Canada) **8** (2005) 155

46. Synthesis and Stability studies of Thiophenol Capped CdS Nanoparticles
Manjunatha Pattabi and Saraswathi Amma B
Solar Energy Mater and Solar Cells (Elsevier) **90** (2006) 2377

47. Effect of Temperature and Electron Irradiation on the I –V Characteristics of Au/CdTe Schottky Diodes
Manjunatha Pattabi, Sheeja Krishnan, Ganesh, X. Mathew
Solar Energy (Elsevier) **81** (2007) 111

48. Effect of thermal cycling on the shape memory transformation behavior of NiTi alloy: Powder X - ray diffraction study
Manjunatha Pattabi, Ramakrishna.K and Mahesh.K.K
Materials Science & Engineering A (Elsevier) **448** (2007) 33

49. Photoluminescence study of PVP capped CdS nanoparticles embedded in PVA matrix
Manjunatha Pattabi, Saraswathi Amma B and K.Manzoor
Mater. Res.Bull. (Elsevier) **42** (2007) 828

50. Effect of Precursor Concentration on the Particle Size of Mercaptopropionic Acid capped CdS Nanoparticles
Manjunatha Pattabi and Saraswathi Amma B
J. New Mater. For Electrochemical Systems (Canada) **10** (2007) 43

51. Synthesis of Mercaptopropionic Acid Capped CdS Nanoparticles
Manjunatha Pattabi and Saraswathi Amma B
J. New Mater. For Electrochemical Systems (Canada) **10** (2007) 49

52. Comparison of Various Organic Stabilizers as Capping Agents for CdS Nanoparticles Synthesis
B. Saraswathi Amma, K.Ramakrishna and **Manjunatha Pattabi**
J.Mater.Sci. Mater. in Electronics (Springer) **18** (2007) 1109

53. Effect of 8 Mev Electron Irradiation on the Optical Properties of PVP Capped CdS Nanoparticles in PVA Matrix
Manjunatha Pattabi, Saraswathi Amma B, K.Manzoor and Ganesh Sanjeev
Solar Energy Mater and Solar Cells (Elsevier) **91** (2007) 1403

54. Studies on the Temperature Dependence of I-V and C-V Characteristics of Electron Irradiated Silicon Photo-detectors
Manjunatha Pattabi, Sheeja Krishnan and Ganesh Sanjeev
Solar Energy Mater and Solar Cells (Elsevier) **91** (2007) 1521

55. 8 Mev Electrón Irradiation Effects in Silicon Photo-detectors
Sheeja Krishnan, Ganesh Sanjeev and **Manjunatha Pattabi**
Nucl.Instr. and Meth. B (NIMB) (Elsevier) **264** (2007) 79

56. Effect of 8 MeV Electron Irradiation on the Performance of CSS Grown CdTe/CdS Solar Cells
Sheeja Krishnan, Ganesh Sanjeev, **Manjunatha Pattabi**, Harin S Ullal, Xuanzhi Wu
Semicond. Sci. Tech. (IOP, UK) **22** (2007) 1307

57. Electron Irradiation Effects on the Schottky Diode Characteristics of p-Si
Sheeja Krishnan, Ganesh sanjeev, **Manjunatha Pattabi**
Nucl.Instr. and Meth. B (NIMB) (Elsevier) **266** (2008) 261

58. Effect of Mechanical Cutting and Polishing on the Shape Memory Transformation Behavior of NiTi Alloy

Manjunatha Pattabi and K. Ramakrishna
Materials Science & Engineering A (Elsevier) **486** (2008) 14

59. Physical and Thermal Properties of 8 MeV Electron Irradiated HPMC Polymer Films
Sangappa, T Demappa, Mahadevaiah, S Ganesha, S Divakara, **Manjunatha Pattabi**, R Somashekar
Nucl.Instr. and Meth. B (NIMB) (Elsevier) **266** (2008) 3975

60. Synthesis and Optical properties of CdS/ZnS Core Shell Nanoparticles
Saraswathi Amma B, Manzoor K, Ramakrishna K and **Manjunatha Pattabi**
Materials Chemistry and Physics (Elsevier) **112** (2008) 789

61. Effect of electron irradiation on the properties of CdTe/CdS Solar cells
Sheeja Krishnan, Ganesh Sanjeev, **Manjunatha Pattabi**, X. Mathew
Solar Energy Mater. and Solar Cells (Elsevier) **93** (2009) 2

62. Synthesis and Characterization of Thiosalicylic Acid Stabilized Gold Nanoparticles
Rani M. Pattabi and Manjunatha Pattabi
Spectrochimica Acta Part A (Elsevier) **74** (2009) 195

63. Electrical Properties of RF Sputtered CdTe/CdS Thin Film Solar Cells
Sheeja Krishnan, Ganesh Sanjeev, **Manjunatha Pattabi** and X. Mathew
The Open Fuels & Energy Sci. J. (Bentham Open) **2** (2009) 110

64. Electrical behaviour of discontinuous silver films deposited on softened Polystyrene and Poly (4-vinylpyridine) blends
Manjunatha Pattabi, Pratima Parashar and S C Gurumurthy
J.Mater.Sci. Mater. in Electronics (Springer) **20** (2009) 1182

65. Studies on the Growth and Stability of Silver Nanoparticles Synthesized by Electron Beam Irradiation
Manjunatha Pattabi, Rani M Pattabi, Ganesh Sanjeev
J.Mater.Sci. Mater. in Electronics (Springer) **20** (2009) 1233

66. Optical properties of CdS – PVA Nanocomposites
Manjunatha Pattabi and Saraswathi Amma B
Composite Interface (Brill Academic) **17** (2010) 103

67. Antibacterial Potential of Silver Nanoparticles Synthesized by Electron Beam Irradiation
Rani M Pattabi, K R Sridhar, Srinath Gopakumar, Vinayachandra Bhat, **Manjunatha Pattabi**
Int. J. Nanoparticles (Inderscience, Switzerland) **3** (2010) 53

68. Conversion of microfiltration membrane into nanofiltration membrane by vapour phase deposition of aluminium for desalination application
Mahesh Padaki, Arun M Isloor, K. K. Nagaraja, H. S. Nagaraja and **Manjunatha Pattabi**
Desalination (Elsevier) **274** (2011) 177

69. Morphological changes in nanoparticulate silver films due to electron beam irradiation of polystyrene substrates
Manjunatha Pattabi, S C Gurumurthy, Ganesh Sanjeev and A B Gaikwad
Nucl.Instr. and Meth. B (NIMB) (Elsevier) **269** (2011) 1534

70. Electrical behavior of silver particulate films deposited on 8 MeV electron beam irradiated softened polystyrene substrates
Manjunatha Pattabi, Gurumurthy S C, Ganesh Sanjeev, Anil B Gaikwad
J.Mater.Sci. Mater. in Electronics (Springer) **22** (2011) 1095

71. Depth Distribution of Silver Particulate Films Deposited in Softened Polystyrene Substrates Studied through RBS
Richard L Thompson, S C Gurumurthy and **Manjunatha Pattabi**
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