

Dr. Ravikant Prasad

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AREA OF INTEREST/SPECIALIZATION

Material preparation:

- ❖ Graphitic thin film by physical vapor deposition (DC magnetron) and chemical vapor deposition (methane cracking at high temperature)
- ❖ Epitaxial strained thin film (few nano-meters thin) preparation by DC/RF magnetron sputtering
- ❖ Thin film (hundred nano-meters to micro-meters thick) preparation by spray pyrolysis technique
- ❖ Polycrystalline bulk sample by solid state reaction (high temperature synthesis) and sol-gel process (low temperature synthesis)

Structural analyses:

- ❖ Structural analysis of X-ray diffraction pattern of polycrystalline bulk sample using Rietveld software (FullProf)
- ❖ Strain and structure analysis of X-ray diffraction pattern of Epitaxial strained/Polycrystalline thin films
- ❖ Thickness measurement (using step film) and Surface analyses by AFM

Magneto-Transport properties and their analysis:

- ❖ Electrical and magnetic characterization of thin film and bulk materials by four probe technique and made some four probe set-up during my Ph.D.
- ❖ Analysis of resistivity data in various resistivity models using origin software
- ❖ Designed AC susceptibility setup keeping all the parameter in mind for getting the result of at least microgram of materials using lock-in-amplifier

Automation using LabView

- ❖ Automated resistivity vs. temperature measurement
- ❖ Automated control of kryo-cooler pump with lakeshore temperature controller to measure the resistivity vs. temperature measurement

PROFESSIONAL EMPLOYMENT

- ❖ **Assistant Professor (Ad hoc)**
From **24-07-2013** to **till date**
Department of Physics and Electronics, Hansraj College, Malka Ganj, Delhi-110007
- ❖ **Assistant Professor (Ad hoc)**
From **25-01-2011** to **22-5-2013** (with continuations after every 4 months as per Delhi University rules for Ad hoc appointment)
Department of Physics, Ramjas College, University of Delhi, Delhi-07
- ❖ **Assistant Professor (Guest)**
From **Feb' 2011** to **Apr' 2011**
- ❖ **Assistant Professor (Guest)**
From **Nov' 2010** to **Dec' 2010**

EDUCATIONAL QUALIFICATION

- ❖ **Ph. D in Physics** (September 2011)
Department of Physics and Astrophysics, University of Delhi
Thesis title: "Study of thickness modified magneto-transport in doped manganite thin films"
- ❖ **M. Sc. (Physics)** (July 2004)
Department of Physics and Astrophysics, University of Delhi

- Specialization in Experimental Solid State Physics
- ❖ **B. Sc. (Hons.) Physics** (July 2001)
Motilal Nehru College
University of Delhi

FELLOWSHIPS AND AWARDS

- ❖ **Council of Scientific & Industrial Research –University Grant Commission National Eligibility Test for Lectureship-Junior Research Fellowship CSIR-UGC NET-JRF** (June 2005)
- ❖ **Qualified Graduate Aptitude test in Engineering (GATE) in Physics, India-GATE** (2005) with **96.7** percentile (**All India Rank - 116**)
- ❖ **Council of Scientific & Industrial Research –University Grant Commission National Eligibility Test for Lectureship CSIR-UGC NET-LS** (June 2004)
- ❖ **Qualified Graduate Aptitude test in Engineering (GATE) in Physics, India-GATE** (2003) with **80.0** percentile

PROFESSIONAL ACTIVITIES

- ❖ **Member of Local Organizing Committee of Indo-German workshop on Organic and Inorganic Advanced Materials for Future Energy Requirements-2012**

REFERENCE

- ❖ **Dr. Amarjeet Kaur (Thesis Supervisor)**
Associate Professor
Department of Physics and Astrophysics
University of Delhi
Delhi-110007
INDIA
Email: amarkaur@physics.du.ac.in
- ❖ **Dr. H. K. Singh (Thesis Co-Supervisor)**
Senior Scientist
Quantum Phenomena and Application
National Physical Laboratory
Dr. K. S. Krishnan Marg
New Delhi-110012
INDIA
Email: hks65@mail.nplindia.ernet.in
- ❖ **Dr. G. D. Varma**
Associate Professor
Indian Institute of Technology Roorkee
Roorkee
Uttarakhand-247667
INDIA
Email: gdvarfph@iitr.ernet.in

LIST OF PUBLICATIONS IN SCI (INTERNATIONAL JOURNAL)

My h-index is 7 and total citations are 89 as on 01st June 2013

Year 2012

1. P. Kumar, **R. Prasad**, A. K. Srivastava, N. Vijayan, R. K. Dwivedi and H. K. Singh
“Microstructural and magnetotransport properties of $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ ($0.45 \leq x \leq 0.60$) thin films”
Journal of Alloys and Compound, VOL - 531, Page – 23, Citation: 00

Year 2011

2. P. Kumar, **R. Prasad**, R. K. Dwivedi and H. K. Singh

“Out of plane low field anisotropic magnetoresistance in Nd_{0.51}Sr_{0.49}MnO₃ thin films”

Journal of Magnetism and Magnetic Materials, VOL - 323, Page – 2564, Citation: 00

3. P. Kumar, R. Prasad, R. K. Dwivedi and H. K. Singh

“Anomalous Weak Ferromagnetism in Electron Doped Nd_{1-x}Sr_xMnO₃ (0.50 < x < 0.62) Thin Films”

Journal of Korean Physical Society, VOL - 59, Page – 2792, Citation: 00

4. P. Kumar, R. Prasad, P. K. Siwach, R. K. Dwivedi and H. K. Singh

“Magneto-Transport properties of La_{0.8}Sr_{0.2}Mn_{1-x}Cu_xO₃ thin films fabricated by using spray pyrolysis”

Journal of Korean Physical Society, VOL - 58, Page – 58, Citation: 00

Year 2010

5. M. K. Srivastava, R. Prasad, P. K. Siwach, M. P. Singh and H. K. Singh

“Impact of size mismatch induced quenched disorder on phase fluctuation and low field magnetotransport in polycrystalline Nd_{0.58-x}Gd_xSr_{0.42}MnO₃”

Journal of Applied Physics, VOL - 107, Page - 09D726, Citation: 01

6. V. Agarwal, R. Prasad, M. P. Singh, P. K. Siwach, A. Srivastava, P. Fournier, and H. K. Singh

“Evidence of substrate induced charge order quenching, insulator metal transition, and colossal magnetoresistance in polycrystalline Pr_{0.58}Ca_{0.42}MnO₃ thin films”

Applied Physics Letter, VOL - 96, Page – 052512, Citation: 09

7. R. Prasad, M. P. Singh, P. K. Siwach, A. Kaur, P. Fournier and H. K. Singh

“Effect of thickness on magnetic phase coexistence and electrical transport in Nd_{0.51}Sr_{0.49}MnO₃ films”

Applied Physics A, VOL - 99, Page – 823, Citation: 01

Year 2009

8. R. Prasad, M. P. Singh, W. Prellier, P. K. Siwach, R. Rawat, A. Kaur and H. K. Singh

“Comparative study of transport properties of compressively strained epitaxial and polycrystalline La_{0.88}Sr_{0.12}MnO₃ thin films”

Physica Status Solidi B, VOL - 246, Page – 1662, Citation: 07

9. H. K. Singh, P. Kumar, R. Prasad, M. P. Singh, V. Agarwal, P. K. Siwach and P. Fournier

“Impact of magnetic phase coexistence on magnetotransport in polycrystalline Nd_{0.51}Sr_{0.49}MnO₃ thin film”

Journal of Physics D: Applied Physics, VOL - 42, Page – 105009, Citation: 00

Year 2008

10. R. Prasad, M. P. Singh, P. K. Siwach, P. Fournier and H. K. Singh

“Anomalous insulator-metal transition and weak ferromagnetism in Nd_{0.37}Sr_{0.63}MnO₃ thin films”

Europhysics Letters, VOL - 84, Page – 27003, Citation: 04

11. R. Prasad, H. K. Singh, M. P. Singh, W. Prellier, P. K. Siwach and A. Kaur

“Thickness dependent transport properties of compressively strained La_{0.88}Sr_{0.12}MnO₃ ultrathin films”

Journal of Applied Physics, VOL - 103, Page – 083906, Citation: 11

Year 2007

12. R. Prasad, Anurag Gaur, P. K. Siwach, G. D. Varma, A. Kaur and H. K. Singh

“Effect of large compressive strain on low field electrical transport in La_{0.88}Sr_{0.12}MnO₃ thin films”

Journal of Physics D: Applied Physics, VOL - 40, Page – 295, Citation: 08

13. R. Prasad, M. P. Singh, P. K. Siwach, W. Prellier and H. K. Singh

“Enhanced magneto-electrical properties and room temperature magnetoresistance in lightly doped manganite thin films”

Solid State Communication, VOL - 142, Page – 445, Citation: 10

14. P. K. Siwach, V. P. S. Awana, H. Kishan, R. Prasad, H. K. Singh, S. Balamurugan, E. Takayama-Muromachi and O. N. Srivastava

“Room temperature magneto-resistance and temperature coefficient of resistance in La_{0.7}Ca_{0.3-x}Ag_xMnO₃ thin films”

Journal of Applied Physics, VOL - 101, Page – 073912, Citation: 16

15. P. K. Siwach, **R. Prasad**, A. Gaur, H. K. Singh, G. D. Varma and O. N. Srivastava “Microstructure-magnetotransport correlation in $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ ”

Journal of Alloys and Compounds, VOL - 443, Page – 26, Citation: 22

INTERNATIONAL CONFERENCES

1. **R. Prasad**, M. P. Singh, P. K. Siwach, V. Agarwal, P. Kumar, A. Kaur and H. K. Singh
“Impact of thickness on magnetic phase coexistences and electrical transport in the vicinity of multi-critical point in $\text{Nd}_{1-x}\text{Sr}_x\text{MnO}_3$ thin film”

International Conference on Quantum effects in Solids of Today (I-ConQuEST) (Poster presentation)

Dec 20-23, 2010, National Physical Laboratory, New Delhi, India

2. **R. Prasad**, M. P. Singh, A. Kaur and H. K. Singh

“Out-of-plane anisotropy magnetoresistance in compressive strained and polycrystalline thin film of $\text{Nd}_{0.51}\text{Sr}_{0.49}\text{MnO}_3$ ”

11th Joint MMM-Intermag Conference (Poster presentation)

Jan 18-22, 2010, Washington DC, USA

3. Manoj K. Srivastava, **R. Prasad**, P. K. Siwach, M. P. Singh, and H. K. Singh

“Impact of size mismatch induced quenched disorder on phase fluctuation and low field magnetotransport in polycrystalline $\text{Nd}_{0.58-x}\text{Gd}_x\text{Sr}_{0.42}\text{MnO}_3$ ”

11th Joint MMM-Intermag Conference (Poster presentation)

Jan 18-22, 2010, Washington DC, USA

4. P. Kumar, **R. Prasad**, P. K. Siwach, R. K. Dwivedi and H. K. Singh,

“Structural and transport properties of B-site Cu doped $\text{La}_{0.80}\text{Sr}_{0.20}\text{MnO}_3$ thin film on LaAlO_3 by spray pyrolysis”

International Conference on Electroceramic-2009 (Poster presentation)

December 13-17, 2009, University of Delhi, Delhi, India

5. P. Kumar, V. Singh, **R. Prasad**, H.K. Singh and R. K. Dwivedi,

“Magneto-electrical studies in LSMO-BTO bulk and nano composites”

International conference on Materials and Advances Technologies & International Union of Material Research Societies-International Conference in Asia-2009 (Oral presentation)

July 3, 2009, Singapore

6. A. Gupta, P. Kumar, **R. Prasad**, H. K. Singh, and R. K. Dwivedi

“Compositional tuning of magneto-transport properties in Pb doped NdMnO_3 ”

International Conference on Transport & Optical Properties of Nanomaterials (Poster presentation)

Jan 5-8, 2009, University of Allahabad, Allahabad 211002, India