S. MATHIMALAR

TIFR Hyderabad, Gopanapally, Hyderabad - 500 107, Telangana, INDIA
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EDUCATION

National Post-Doctoral Fellow, June 2017 - Present
Tata Institute of Fundamental Research, Hyderabad
Supervisor : Dr. Karthik V Raman
Area of study : Proximity Induced superconductor.

Post-Doctoral Fellow, Sept 2015 - May 2017
Tata Institute of Fundamental Research, Hyderabad
Supervisor : Dr. Karthik V Raman
Area of study : Spintronics.

PhD in Physics, 2015
India-Based Neutrino Observatory (INO) at Tata Institute of Fundamental Research, Mumbai
Supervisor : Prof. R. G. Pillay.
Area of study : NTD Ge sensor development for superconducting bolometers.

MSc in Physics, 2009
Bharathidhasan University, Trichy, Tamilnadu

BSc in Physics, 2007
Seethalakshmi Ramaswamy College, Trichy, Tamilnadu

RESEARCH INTERESTS

- Topological Superconductor
- Majorana Fermion
- Spin Caloritronics
- Detector Physics
- Low Temperature Physics

INSTRUMENTATION SKILLS

- Molecular Beam Epitaxial (MBE) growth
- Sputtering setup
- Wet/dry dilution refrigerator
- Low temperature cryogen-free STM
- Reflection high-energy electron diffraction (RHEED)
- Designed and assembled a homemade sputtering setup
- Designed and automated 4K cryo-insert for low-temperature resistance measurement.

ACADEMIC ACHIEVEMENTS

- Awarded National Post Doctoral Fellowship (NPDF) - 2017
- Presented an Invited talk at IEEE-Bombay symposium - 2015
- Conference paper got selected for Oral presentation at WOLTE 11 - 2014
- Won best poster award in National Symposium on Particle Detector and Instruments for the poster Development of sensors for Bolometric Application - 2012.
- Awarded DAE Fellowship under India-Based Neutrino Observatory (INO) Graduate Training Program 2009.
- Selected for Indian Academy of Sciences - summer research fellowship, 2009 at Indian Institute of Science (IISc., Bangalore) for summer internship.
- Secured all India rank 236 in IIT-JAM, All India Entrance Examination - 2007.
- Constructed a model Vehicle Toppling Indicator as my dream engine and secured STATE LEVEL FIRST prize in it, in the year 2006.

SELECTED PUBLICATIONS

- N. Dokania, V. Singh, **S. Mathimalar** et al., Estimation of low energy neutron flux (En 15 MeV) in India-based Neutrino Observatory cavern using Monte Carlo techniques, Journal of Instrumentation 10 T12005 (2015)
- V. Singh, A. Garai, **S. Mathimalar** et al., Specific Heat of Teflon, Torlon - 4203 and Torlon - 4301 in the range of 30 - 400 mK, Cryogenics 67 15 (2015)
- **S. Mathimalar** et al., Study of radioactive impurities in neutron transmutation doped Ge, Nuclear Instruments and Methods in Physics Research Section A 774 68 (2015)
- **S. Mathimalar** et al., Characterization of neutron transmutation doped (NTD) Ge for low temperature sensor development Nuclear Instruments and Methods in Physics Research Section B 345 33 (2015)
- N. Dokania, V. Singh, **S. Mathimalar**, V. Nanal, S.Pal, R. G. Pillay Characterization of a low background HPGe detector, Nuclear Instruments and Methods in Physics Research Section A 745 119 (2014)
- N. Dokania, V.Singh, **S. Mathimalar**, et al., Study of neutron induced background and its effect on the search of 0 decay in 124Sn Journal of Instrumentation 9 P11002 (2014)
- V. Singh, **S. Mathimalar**, et al., Heat capacity setup for superconducting bolometer absorbers below 400mK Journal of Low Temperature Physics 175 604 (2014)
- V. Singh, **Mathimalar. S**, et al., Cryogen Free Dilution Refrigerator for bolometric search of neutrinoless double decay ($0\nu\beta\beta$) in 124Sn Pramana Journal of Physics 81 719 (2013)

The complete list of publications is available in Google Scholar.

REFERENCES

- Dr. Karthik V. Raman
  Tata Institute of Fundamental Research (TIFR)
  Gopanpally
  Hyderabad 500 107
  India.
  http://www.tifrh.res.in/tcis/

- Prof. R. G. Pillay
  Department of Nuclear and Atomic Physics
  Tata Institute of Fundamental Research
  Homi Bhabha Road
  Mumbai 400 005
  India

- Prof. S. Ramakrishnan
  Department of Condensed matter and Material science
  Tata Institute of Fundamental Research
  Homi Bhabha Road
  Mumbai 400 005
  India