



## Dr. M. Kumaresavanji

Assistant Professor, Department of Physics (UAP),  
National College (Autonomous), Tiruchirappalli, TN

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### Educational Qualifications:

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Course/ Degree	Subjects	Year of awarded	University/ Institute
Ph. D Degree	Physics	2010	Brazilian Center for Research in Physics (CBPF), Rio de Janeiro, Brazil
Master Degree	Physics	2003	Bharathidasan University TN, India
Bachelor Degree	Physics	2001	Vivekananda college Thiruvadakam, TN, India
HSCC	Science		State Board, Tamilnadu
SSLC	-----		State Board, Tamilnadu

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### Work experience:

2018 - Present                      Assistant Professor  
Department of Physics (UAP)  
National College (Autonomous)  
Tiruchirappalli

2012 - 2017                        Post-Doctoral Researcher  
IFIMUP- Department of Physics and Astronomy  
Faculty of Sciences, University of Porto  
Rua Campo Alegre 687, 4169007 Porto, Portugal

## **Research interests:**

- Fabrication of nanostructured materials for magnetic refrigeration
- Nanoporous alumina templates assisted Nano synthesis
- Magnetic properties of nanomaterials
- Materials under extreme conditions (under pressure and at low temperatures)

## **Research Project completed (2019 to 2022):**

- SERB-TARE major research project worth 18,30,000.00  
Ref. No. TAR/2019/000463  
Project title: "Enhancing magneto-transport property in nanostructured materials"

## **Publications:**

- 31 Research papers in International Scopus indexed scientific Journals
- 12 Papers presented in International Scientific Conferences/Seminars
- 14 Invited talks delivered on Nanoscience and Nanotechnology

## **Research Guidance:**

- Co-Supervisor - 1 PhD student
- M.Sc., Thesis guided - 12 students

## **Awards and Fellowships**

- 2006 – 2010: TWAS, Italy and CNPq, Brazil fellowship for postgraduate studies
- 2012 – 2017: FCT, Portugal Individual fellowship for Post-doctoral research

## **Membership in Committee:**

- 2023 – 2024 Board of Studies Member – Department of Physics, Sri.S. Ramasamy Naidu Memorial College, Sattur, Virudhunagar, Tamilnadu
- Organizing Secretary - International Conference on Recent Advances in Materials Science (ICRAMS-2022) held on 19 – 21 May 2022 at National College, Tricuhirappalli.
- Organizing Committee Member - DST-INSPIRE Internship Science Camp held during 6 – 11 August 2018 at National College, Tiruchirappalli.
- Convener - International Webinar on Local Probe Technique held on 10<sup>th</sup> June 2020 at National College, Tiruchirappalli.

## **Technology known**

- ❖ Designing and fabrication:
  - Experimental set-up to produce nanoporous Alumina Template (5 to 200 nm pore diameter)
  - Hydrostatic pressure cell up to 2.5 GPa

- o Uniaxial pressure cell up to 0.5 GPa
- ❖ Coating methods : Spin coating, PLD, E-beam evaporation
- ❖ Low Temperature : He4 Cryostat, Closed Cycle Refrigerator, Dilution refrigerator, PPMS
- ❖ Designing software : Vector works (mini CAD)
- ❖ Automation software : LabVIEW

## High end Equipment handled

- ❖ X-ray diffractometer (Rigaku)
- ❖ Scanning electron microscopy (FEI Quanta 400 FEG ESEM/EDAX Genesis X4M)
- ❖ Atomic force microscopy (Veeco Instruments)
- ❖ PPMS and SQUID magnetometer (Quantum design)
- ❖ Pulsed laser deposition unit
- ❖ Ion beam Sputtering (Commonwealth scientific corporation)
- ❖ E-beam evaporator (Home-made)
- ❖ High temperature tubular furnace with eurotherm controller (Carbolite)
- ❖ Spin coater (Laurell WS-400-6NPP)
- ❖ He4 cryostat and closed cycle refrigerator for electrical resistance measurements
- ❖ Synchrotron lab (LNLS, Campinas, Brazil)
- ❖ Certified user for clean room lab C1000 to produce nanomaterials (ISO 6)

## Invited Talks delivered:

1. Title: Magnetic Cooling  
5<sup>th</sup> September 2023, International Symposium in Chemistry for Sustainable Energy and Medical Applications-II  
PSG College of Arts and Science, Coimbatore, Tamilnadu
2. Title: Magnetic Cooling: A environmentally Friendly Green Refrigeration  
9<sup>th</sup> August 2023, FDP on Innovations in Materials for Optical and Energy storage/conversion applications  
Nehru Institute of Technology, Coimbatore, Tamilnadu
3. Title: Magnetocaloric effect on nanomaterials for magnetic cooling: A way to green refrigeration  
26<sup>th</sup> August 2022, National Seminar on Nanomaterials for Energy Harvesting  
KGiSL Institute of Technology, Coimbatore, Tamilnadu
4. Title: Physics Behind the Nanotechnology  
20<sup>th</sup> July 2022, Physics Association Meeting  
J.J. College of Arts and Science, Pudukkottai
5. Title: Nanoscience  
28<sup>th</sup> February 2022, Phi Club Inaugural Function

Ganesar College of Arts and Science, Melasivapuri, Pudukottai

6. Title: Nanoscience: Present and Future Prospects  
29<sup>th</sup> September 2020, Physics Association Meeting  
Holy Cross College, Tiruchirappalli, Tamilnadu
7. Title: Magnetic nanostructured materials by template assisted method  
22<sup>nd</sup> July 2020, Webinar on Multifunctional Nanostructured Materials  
MVM Governemnt Arts College for Women, Dindigul, Tamilnadu
8. Title: Magnetic Storage devices  
27<sup>th</sup> February 2020, National Workshop on Advanced Materials for Energy conversion and storage (AMECS-2020)  
Arignar Anna Government Arts and Science College, Karaikal, Puducherry
9. Title: Magnetic nanohole arrays fabricated by alumina template assisted method for magnetic refrigeration  
23<sup>rd</sup> March 2018, International Conference on Recent Advances in Materials (ICRAMS-2018)  
National College, Tiruchirappalli, Tamilnadu
10. Title: Nanostructured materials for magnetic refrigeration  
29<sup>th</sup> January 2018, International Conference on Material Physics (ICOMP-2018)  
Bishop Heber College, Tiruchirappalli, Tamilnadu
11. Title: Fabrication of magnetic nanostructured materials using anodized alumina templates  
7<sup>th</sup> April 2017, International conference on Advances in materials,  
M. Kumarasamy college of Engineering, Karur, TN
12. Title: Nanoporous alumina templates: A versatile material to fabricate diversified nanostructures  
9<sup>th</sup> March 2017, International conference on materials and Technology - Synthesis, processing and Applications  
Sri S. Ramasamy Naidu memorial college, Sattur, TN
13. Title: Magnetic refrigeration using nanostructured materials  
27<sup>th</sup> February 2016, National Science day in Yadava College, Madurai
14. Title: Fabrication of magnetic nanostructured materials  
29<sup>th</sup> February 2016, One day conference in Kanchi Mamunivar center for postgraduate studies, Puducherry

### **FDP/STTP/Refresher Course Attended:**

1. 5 - 12<sup>th</sup> June 2023, Seven Days Faculty Development Programme on Exploring Innovation in Personal and Institutional Development  
National College, Tiruchirappalli, Tamilnadu
2. 10 - 15 May 2021, AICTE Sponsored online Short Term Training Programme on " Emerging trends in nanomaterials for electronic and Optoelectronic Devices

- Swarnandhra College of Engineering and Technology, Kakinada
3. 5<sup>th</sup> May 2021, National Level Faculty Development Program on Advanced Science and Technology  
SRM Institute of Science and Technology, Chennai
  4. 3<sup>rd</sup> February 2021, Faculty Development Program on Advances in Nanomaterials and Single Crystal on Practical Device Applications  
Adikavi Nannaya University, Andhra Pradesh
  5. 02 – 07<sup>th</sup> November 2020, AICTE Sponsored Online Short Term Training Programme on Nanomaterials for Clean Energy and Environmental Applications  
Dr. Mahalingam College of Engineering and Technology, Pollachi
  6. 29 – 30 June and 06 – 07 July 2019, Four days Faculty Development Programme  
National College, Tiruchirappalli, Tamilnadu

### List of Publications:

1. S. Thangavel, V. Kathiravan, R. Ashok Kumar, T. Muthu Lakshmi, G. Satheesh Kumar, P. Selvarajan and **M. Kumaresavanji**  
J. Elect. Mater. 52 (2023) 5642-5651  
*Impact factor: 2.1*
2. T. Sindhu, A.T. Ravichandran, A. Robert Xavier, **M. Kumaresavanji**  
Appl. Phys. A: Mat. Sci. Proces. 129 (2023) 685  
*Impact Factor: 2.7*
3. R. Rathika, **M. Kumaresavanji**, A. Robert Xavier and A.T. Ravichandran  
AIP Conf. Proc. 2861 (2023) 020005-1–020005-7
4. Kathiravan V, Thangavel S, Ashok Kumar R, Muthu Lakshmi T, Satheesh Kumar G, Selvarajan P, **Kumaresavanji M**  
J. Elect. Sci. Tech. 20 (2022) 100178
5. S. Thangavel, V. Kathiravan, R. Ashok Kumar, S. Eniya, G. Satheesh Kumar, P. Selvarajan, **M. Kumaresavanji**  
J. Elect. Mater. 51 (2022) 3068-3077  
*Impact factor: 2.1*
6. A.T. Ravichandran, R. Rathika, **M. Kumaresavanji**  
Mater. Today: Proc. 2022,  
<https://doi.org/10.1016/j.matpr.2022.07.432>
7. S. Thangavel, V. Kathiravan, R. Ashok Kumar, S. Eniya, G. Satheesh Kumar, P. Selvarajan and **M. Kumaresavanji**  
J. Nonlinear Opt. Phys. Mater. 2022, <https://doi.org/10.1142/S0218863523500248>  
*Impact factor: 2.7*
8. A.T. Ravichandran, R. Rathika, **M. Kumaresavanji**  
J. Mol. Str. 1224 (2020)129048

*Impact factor: 3.8*

9. I. Messaoui, K. Riahi, **M. Kumaresavanji**, W. C. Koubaa, M. Koubaa and A. Cheikrouhou  
J. Mag. Mater. 446 (2018) 108-117

*Impact Factor: 2.7*

10. M. Kanagaraj, I. Phebe Kokila, R. Sofia Jeniffer, P. Sathish Kumar, Helen Annal Therese,  
**M. Kumaresavanji** and C. Sekar  
J. Supercond. Nov. Magn. 31 (2018); 3777 – 3785

*Impact Factor: 1.8*

11. M. Satalkar, S.N. Kane, **M. Kumaresavanji**, and J.P. Araujo  
Mater. Res. Bull. 91 (2017) 14-21

*Impact Factor: 5.4*

12. M. Girish, T. Dhandayuthapani, R. Sivakumar, C. Sanjeeviraja, and **M. Kumaresavanji**  
J. Mater. Sci. Mater. Electron. 28 (2017) 6741-6753

*Impact Factor: 2.8*

13. I. Messaoui, **M. Kumaresavanji**, K. Riahi, W. C. Koubaa, M. Koubaa and A. Cheikrouhou.  
Ceram. Int. 43 (2017) 498 – 506

*Impact Factor: 5.2*

14. I. Messaoui, **M. Kumaresavanji**, K. Riahi, W. C. Koubaa, M. Koubaa and A.  
Cheikrouhou.  
J. Alloys Compd. 693 (2017) 705-718

*Impact Factor: 6.2*

15. **M. Kumaresavanji**, I.T. Gomes, A. Apolinario, A.G. Rolo, B.G. Almeida, A.M.L. Lopes  
and J.P. Araujo.  
Nanotechnology 27 (2016) 125303; 1-8

*Impact Factor: 3.5*

16. V. Pazhanivelu, A. P. Selvadurai, **M. Kumaresavanji** and R. Murugaraj  
Mater. Lett. 166 (2016) 304–306

*Impact Factor: 3*

17. **M. Kumaresavanji**, C.T. Sousa, A. Apolinario, A.M.L. Lopes and J.P. Araujo  
J. Mater. Sci. Eng. B 200 (2015) 117-123

*Impact Factor: 3.6*

18. **M. Kumaresavanji**, C. T. Sousa, A. Pires, A. M. Pereira, A. M. L. Lopes, and J. P.  
Araujo.

J. Appl. Phys. 117 (2015) 104304; 1-6

*Impact Factor: 2.8*

19. G. Anandha Babu, G. Ravi, T. Mahalingam, **M. Kumaresavanji** and Y. Hayakawa  
Dalton Transactions 44 (2015) 4485-4497

*Impact Factor: 4.0*

20. G. Anandha Babu, G. Ravi, Y. Hayakawa, **M. Kumaresavanji**  
J. Mag. Mater. 375 (2015) 184–193

*Impact Factor: 2.7*

21. **M. Kumaresavanji**, C.T. Sousa, A. Pires, A.M. Pereira, A.M.L. Lopes and J.P. Araujo  
Appl. Phys. Lett. **105** (2014) 083110; 1-5

*Impact Factor: 3.7*

22. **M. Kumaresavanji**, M.B. Fontes, A.M.L. Lopes and J.P. Araujo  
Mater. Res. Bull. **51** (2014) 92-96

*Impact Factor: 5.4*

23. A. Narjis, A. El. Kaaouachi, L. Limouny, S. Dlimi, M. Errai, A. Sybous and **M. Kumaresavanji**.

J. Mag. Mag. Mater. **332** (2013) 6-9

*Impact Factor: 2.7*

24. **M. Kumaresavanji**, E.M.B. Saitovitch, J.P. Araujo and M.B. Fontes  
J. Mater. Sci. **48** (2013) 1324-1329

*Impact Factor: 4.5*

25. **M. Kumaresavanji** and M.B. Fontes.

J. Mag. Mag. Mater. **322** (2010) 2355-2359

*Impact Factor: 2.7*

26. **M. Kumaresavanji**, L.L.L. Sousa, F.L.A. Machado, C. Adriano, P.G. Pagliuso, E.M.B. Saitovitch and M.B. Fontes

J. Phys.: Cond. Matter **22** (2010) 236003; 1-7

*Impact Factor: 2.7*

27. **M. Kumaresavanji**, M.S. Reis, Y.T. Xing and M.B. Fontes

J. Phys.: Conf. Ser. **200** (2010) 052013; 1-6

*Impact Factor: NA*

28. **M. Kumaresavanji**, M.S. Reis, Y.T. Xing and M.B. Fontes

J. Appl. Phy. **106** (2009) 093709; 1-6

*Impact Factor: 2.8*

29. S. Arumugam, K. Mydeen, N. Manivannan, **M. Kumaresa vanji**, D. Prabhakaran, A.T. Boothroyd, R.K. Sharma and P. Mandal

Phys. Rev. B **73** (2006) 212412; 1-4

*Impact Factor: 3.7*

30. S. Arumugam, K. Mydeen, **M. Kumaresa vanji** and N. Mori

Rev. Sci. Instr., **76** (2005) 083904; 1-6

*Impact Factor: 1.7*

31. S. Arumugam, K. Mydeen, M. Fontes, N. Manivannan, **M. Kumaresa vanji**, K. Tulasi, S.M. Ramos, E.B. Saitovitch, D. Prabhakaran and A.T. Boothroyd

Solid State Comm. **136** (2005) 292-296

*Impact Factor: 2.1*