

Sundararajan RAMAKRISHNAN

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SUMMARY OF QUALIFICATIONS

<i>Qualification</i>	<i>Institution</i>	<i>Affiliated University</i>	<i>Year</i>
Doctor of Philosophy in Materials Science and Engineering (Pursuing)	Indian Institute of Technology Kanpur, Kanpur, India	Indian Institute of Technology Kanpur, Kanpur, India	-
M.S (by Research) in Metallurgical and Materials Engineering	Indian Institute of Technology Madras, Chennai, India	Indian Institute of Technology Madras, Chennai	2012
Master of Science in Materials Science & Technology	Pondicherry Engineering College, Pondicherry, India	Pondicherry University, Puducherry	2005
Bachelor of Science in Applied Sciences	PSG College of Technology, Coimbatore, India	Bharathiar University, Coimbatore	2003

SKILL SET

Design, develop and characterize next generation energy devices

EXPERIENCE

- PROJECT ASSISTANT-II, National Chemical Laboratory, Pune, Feb-July 2006.
- PROJECT OFFICER, Indian Institute of Technology Madras, July-Aug 2013.
- TEMPORARY FACULTY, National Institute of Technology Tiruchirappalli, September 2013 – December 2016.
- PROJECT SCIENTIST C, International Advanced Research Centre for Powder Metallurgy and New Materials, December 2016 – December 2020

M.S (by Research) THESIS

Functionalized MWCNT reinforced electro spun polymeric micro layer over GDL for PEM fuel cell

Thesis Supervisor: Prof. Prathap Haridoss, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai, India.

RESEARCH OUTCOME

BOOK CHAPTER

1. A chapter on “**Recent Developments in Hydrogen Fuel Cell: Strength and Weakness**” authored by Natarajan Rajalakshmi, Rengarajan Balaji and **Sundararajan Ramakrishnan**, in the Handbook on Sustainable Fuel Technologies: Developments and Perspectives, Edited by Suman Dutta and Chaudhery Mustansar Hussain, Elsevier (Pg. No.431-480) (ISBN: 978-0-12-822989-7).

INTERNATIONAL JOURNAL

1. “*Aligning carbon nanotubes, synthesized using the arc discharge technique, during and after synthesis*”, Joseph Berkmans, **S Ramakrishnan**, Gaurav Jain, Prathap Haridoss, **Carbon** 55 (2013) 185-195 [ISSN: 0008-6223].

CONFERENCE PROCEEDING

1. “*Purification of carbon nanotubes using liquid Bromine*”, **S Ramakrishnan**, Prathap Haridoss, *Proceedings of International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering (ISRS 2010)* published by Department of Metallurgical & Materials Engineering, IIT Madras, Chennai 600036, India. [ISSN No: 0973-659x, 128-132].

INTERNATIONAL CONFERENCES

1. “*Influence of micro-porous layer on the hydrophobic nature of Gas Diffusion Layer in a PEM Fuel Cell*”, **S Ramakrishnan**, Prathap Haridoss, *International symposium & exhibition on Fuel Cell technologies, FUCETECH 2009*, Mumbai.
2. “*Influence of functionalization and surfactant addition on the morphology and dispersion of multiwalled carbon nanotubes in polymer matrices*”, **S Ramakrishnan**, Prathap Haridoss, *International conference on Nanoscience & Nanotechnology, ICANN 2009*, IIT Guwahati.
3. “*Purification of carbon nanotubes using liquid Bromine*”, **S Ramakrishnan**, Prathap Haridoss, *International symposium for research scholars on Metallurgy, Materials Science and Engineering, ISRS 2010*, IIT Madras, Chennai.
4. “*High yield formation of carbon nanotubes using arc discharge assisted with nitrogen jet*”, Joseph Berkmans, **S Ramakrishnan**, Prathap Haridoss, *International symposium for research scholars on Metallurgy, Materials Science and Engineering, ISRS 2010*, IIT Madras, Chennai (The paper received “**Best Paper presentation**” in Oral session).
5. “*Horizontal alignment of multi-walled carbon nanotubes by mechanical forces on the surface of the arc discharge synthesized soot*”, Joseph Berkmans, **S Ramakrishnan**, Prathap Haridoss, *International symposium for research scholars on Metallurgy, Materials Science and Engineering, ISRS 2012*, IIT Madras (The paper received “**Best Paper presentation**” in Oral session).

6. “**Corrosion behaviour of steels used in automobile**”, R. Elansezhian, **S Ramakrishnan**, *East Asia Pacific conference on corrosion CORCON-2005*, organized by NACE International India section, Chennai.

NATIONAL CONFERENCE

1. “*Horizontal alignment of multiwalled carbon nanotubes by mechanical forces on the surface the arc discharge synthesized soot*” Joseph Berkman A, **S Ramakrishnan**, and Prathap Haridoss, National Metallurgists Day, **NMD 2012**, Jamshedpur.
2. “**Electrodeposition of conducting polymer over metallic bipolar plate for PEM fuel cell application- Preliminary analysis**” **S. Ramakrishnan**, N. Rajalakshmi, National Conference on Recent Advances in Chemistry (RAC-19), 4-5 January 2019, Anna University, Chennai

ACHIEVEMENTS

- ✓ Won “**CERTIFICATE OF MERIT**” in National Level Science Talent Search Exam (*NLSTSE*) 1999.
- ✓ **QUALIFIED** in **Graduate Admission Test in Engineering (GATE) 2005** in **ENGINEERING SCIENCES** stream securing **All India Rank 234**.
- ✓ **Recipient of Fellowship (2006-2009)** to pursue M.S in IIT Madras from Ministry of Human Resource Development, India.
- ✓ Best Oral Presentation “**Electrodeposition of conducting polymer over metallic bipolar plate for PEM fuel cell application- Preliminary analysis**” for during National Conference on Recent Advances in Chemistry (RAC-19), 4-5 January 2019, Anna University, Chennai

WORKSHOPS/CONFERENCES

- ✓ Short term course on **CFD of Convective Heat and Mass transfer** at CFD Centre, IIT Madras, Chennai from 18th – 22nd September, 2006.
- ✓ An Indo-UK workshop on **Low carbon technologies for Decentralized power production** 17th-18th March, 2008 sponsored by British Council & Asian Pacific Centre for Energy and Environment.
- ✓ **TWISHA’09**, National Seminar on advanced polymers followed by workshop on **Fuel cell technology** organized by Department of Polymer Engineering, Mahatma Gandhi University College of Engineering, Kerala from 23rd-24th January 2009.
- ✓ **CMS’09, Computational Materials Science** workshop organized by the Department of Materials Engineering at Indian Institute of Science (IISc), Bangalore and the UGC Networking Resource Centre for Materials (NRC-M) from 6th-8th March 2009.
- ✓ One day workshop on **Atom Probe Tomography** organized by the Department of Metallurgical and Materials Engineering, IIT Madras, India, Combinatorial Sciences and Materials Informatics Collaboratory (CoSMIC), Iowa State University, USA and Defence Metallurgical Research Laboratory (DMRL), India on 9th January 2012.

- ✓ One day course on **Microscopic Techniques in Materials Characterization** organized by the Department of Metallurgical and Materials Engineering, National Institute of Technology Tiruchirappalli, India on 10th October 2014.
- ✓ One day course on **Structural Characterization** organized by the Department of Metallurgical and Materials Engineering, National Institute of Technology Tiruchirappalli, India on 14th October 2014.
- ✓ Workshop on “**Atom Probe Tomography**” at International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad on 7th September 2018 and presented the work on “Concentration Profile and Spatial Distribution of elements in PEM Fuel Cell Catalyst and Coatings over Metallic Flow Field Plate”
- ✓ Participated in **All India Training Programme Industrial Metal Finishing, Electroplating Technologies, Aerospace Chemical/Process and Effluent Treatment Processes**, organized by The Electrochemical Society of India in association with Dept. of Inorganic and Physical Chemistry, IISc Bengaluru on 5th – 7th March 2010.

INVITED LECTURE

- “**Fuel Cells**”, Engineering Materials and Manufacturing Processes (EMMP 2013), National Institute of Technology Tiruchirappalli, 18th December 2013
- “**Wonder Materials of the 21st Century**”, Advanced Materials and Manufacturing Methods (A3M), National Institute of Technology Tiruchirappalli, 7th June 2016.

INSTRUMENTS HANDLED (Include but not limited to)

Method/Analysis	Instruments
Synthesis	Arc Discharge, Chemical Vapor Deposition
Structural determination /Characterization tools /Test bench	Powder X-Ray Diffractometer (BRUKER Discover D8, PANalytical X'pert plus, RIGAKU SmartLab), Scanning Electron Microscope (FEI Quanta 200, HITACHI SUI150), Differential Thermal Analyzer (NETZSCH, STA 409), Fuel Cell Test Stations
Coating \ Etching \ Contact angle	Electrospinning equipment, GATAN Vacuum coating\etching system, DC Sputter coating, Contact Angle analyzer [GBX, France]
Corrosion	Electrochemical Analyzer (ACM Gill), Salt-Spray chamber, Potentiostat (Solartron Analytical 1470E, BioLogic VMP3B-10)
Mechanical measurements	Nano Indenter, Micro Hardness tester, Hardness testers, UTM
Miscellaneous	Ball Milling [Retsch PM200], Pyrometer [RayTek Marathon series], Sonicators [Ultrasonic probe & bath type], Four probe conductivity

CURRENT WORK

- Currently working as **Scientist (Contract)** in **Center for Fuel Cell Technology, International Advanced Research Center for Powder Metallurgy and New Materials (ARCI)**, Chennai Division.

PROFESSIONAL COMPETENCE

- Adherent to extreme professional standards and part of a prestigious project where very few in India attempt right now.
- Possession of good communication skill, capable of collaborative research with ease.

REFEREES

1) **Prof. Prathap Haridoss**,
Thesis supervisor & Research Guide,
Dept. of Metallurgical & Materials Engg.
Indian Institute of Technology Madras,
Chennai – 600036, TamilNadu.
E-mail: - prathap@iitm.ac.in
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2) **Dr. Harish Kumar**
Professor,
Dept. of Physics,
Pondicherry Engineering College,
Pillaichavady, Pudhucherry 605014,
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Place: Chennai, India

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(**S. RAMAKRISHNAN**)