



**Dr. Lathapriya Vellingiri**

[llathapriyav09@gmail.com](mailto:llathapriyav09@gmail.com)

Mobile : +91 9750607883

Passport No.: L8517054

### Objective

My objective is to apply my knowledge towards the growth of the research group and to update my knowledge in the field of work to perform beyond the expectations. Also, I wish to make myself proud by being a part of the group's successes.

### Professional Experience

| Year                            | Position                                                                                                                                                            | Institution                                                     |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Jan 2016 - 2022                 | Doctoral Student                                                                                                                                                    | SRM Institute of Science and Technology-India                   |
| Dec 2017- Jan 2019              | Senior Research Fellow (SRF) - DST-SERB Project<br>"Carbon nanostructures based hydrogen storage system for Fuel cell applications"<br>Sponsored by Govt. of India. | SRM Institute of Science and Technology-India                   |
| Nov 2015- Nov 2017              | Junior Research Fellow (JRF) -DST-SERB Project<br>"Carbon nanostructures based hydrogen storage system for Fuel cell applications"<br>Sponsored by Govt. of India.  | SRM University -India                                           |
| 1-30 <sup>th</sup> of June 2015 | Internship student (SSVIP-IRC)                                                                                                                                      | International Research Centre,<br>Kalasalingam University-India |
| Sep 2014- Jan 2015              | Study Abroad Programme student                                                                                                                                      | University of Leeds - UK                                        |

### Duties and Responsibilities

- Procurement of new equipment and consumables related to project
- Stock maintenance of consumables and equipment
- Maintenance of the equipment and disposal of used chemicals according to standards
- Handling analytical instruments including Thermo-gravimetric Analysis (TG-DTA), X-ray Diffraction, Kiethley source-meter, Gas-sensor set-up as well as device fabrication instruments such as Electron beam evaporation, Thermal evaporation techniques, Spin Coating, Drop casting and Hydrothermal synthesis technique along with maintenances of standard lab equipments.
- Functionalization of Carbon nanostructures with various metal oxides and complex hydrides. Material synthesis and Characterization using various analytical techniques.
- Optimizing the process parameters to enhance the hydrogen storage capacity of Carbon nanostructures and Execution of designed experiments.
- Data analysis, Interpretation, Documentation and Presentation of analyzed data.
- Publishing documented results in peer-reviewed standard journals.

## Technical Strength

|                                                               |
|---------------------------------------------------------------|
| Nano Scale Material Synthesis and Fabrication                 |
| Nano Scale Material characterization                          |
| Designing custom-made Hydrogen storage set-up (Lab-scale)     |
| Handling of Analytical Instruments and Fabrication Equipments |

## Main Skill sets

| Material Characterization (Analysis)                | Material Characterization (Handling)           | Nanostructure Fabrication |
|-----------------------------------------------------|------------------------------------------------|---------------------------|
| Field Emission Scanning Electron Microscope (FESEM) | Thermo-gravimetric Analysis (TG, DTA, DSC)     | Electron beam Evaporation |
| Transmission Electron Microscope (TEM)              | X-ray Diffraction Analysis                     | Thermal Evaporation       |
| X-ray Diffraction Analysis (XRD)                    | Fourier transform infrared spectroscopy (FTIR) | Chemical Vapor Deposition |
| Fourier transform infrared spectroscopy (FTIR)      | Kiethley Source-meter                          | Spin Coating              |
| Raman Analysis                                      | Hydrogen Storage set-up (Sievert's like)       | Drop Casting              |
| X-ray Photoelectron Spectroscopy (XPS)              | Gas-Sensor-Setup                               | Hydrothermal Synthesis    |
| Thermo-gravimetric Analysis (TG, DTA, DSC)          |                                                | Chemical Synthesis        |
| Hydrogen adsorption/desorption Analysis             |                                                |                           |

## Scientific Publications

- Vellingiri L, Annamalai K, Kandasamy R, Kombiah I. "Synthesis and characterization of MWCNT impregnated with different loadings of SnO<sub>2</sub> nanoparticles for hydrogen storage applications" International Journal of Hydrogen Energy, 2018, 43 (2), pp.848-60. **Impact factor- 5.81**
- Vellingiri L, Annamalai K, Kandasamy R, Kombiah I. "Characterization and hydrogen storage properties of SnO<sub>2</sub> functionalized MWCNT nanocomposites" International Journal of Hydrogen Energy, 2018, 43(22) pp.10396-409. **Impact factor-5.81**
- Vellingiri L, Annamalai K, Kandasamy R, Kombiah I. "Single-walled carbon nanotubes/lithium borohydride composites for hydrogen storage: role of in situ formed LiB(OH)<sub>4</sub>, Li<sub>2</sub>CO<sub>3</sub> and LiBO<sub>2</sub> by oxidation and nitrogen annealing", RSC Advances, 2019, 9, pp.31483-31496. **Impact factor-3.36**
- Annamalai K, Vellingiri L, Kandasamy R, Kombiah I. "Carbon Nanotubes based hydrogen storage and characterization", Science and Technological Research Journal, Volume No. 2, January- February 2018: pp.74-78. **(Science Magazine)**
- Vellingiri L, Annamalai K, Kandasamy R, and Kombiah I. "Borane functionalized multi-walled carbon nanotubes for hydrogen storage applications", In *Proceedings of the seventeenth international conference on thin films: abstracts*. Volume No. 52, 2017
- Kaliyaperumal, A., Vellingiri, L., Periyasamy, G. *et al.* Improved dehydrogenation properties of surface-oxidized LiBH<sub>4</sub>@NiO nanostructure. *J Mater Sci: Mater Electron* (2021). **Impact factor- 2.4**

## Educational Qualifications

| Degree           | Specialization                                                           | Year                 | Institution                                               |
|------------------|--------------------------------------------------------------------------|----------------------|-----------------------------------------------------------|
| PhD<br>(Physics) | "Functionalized Carbon nanostructures for Hydrogen storage applications" | 2022                 | SRM Institute of Science and Technology, India            |
| M.Sc.            | Physics                                                                  | 2015                 | Governments Arts College (Autonomous)-Coimbatore, India   |
| M.Sc.            | Tamil Nadu Study Abroad Programme (1 SEMESTER)                           | Sep 2014 to Jan 2015 | University of Leeds - UK                                  |
| B.Sc.            | Physics                                                                  | 2013                 | LRG Governments Arts College for Women, India             |
| HSC              | State Syllabus                                                           | 2010                 | Jaivabai Corporation Girls Higher secondary school, India |
| SSLC             | State Syllabus                                                           | 2008                 | Jaivabai Corporation Girls Higher secondary school, India |

## References

1. Prof. A. Karthigeyan  
Professor  
Hydrogen storage and Nano sensors Laboratory  
Department of Physics and Nanotechnology  
SRM Institute of Science and Technology  
Kattankulathur, India  
E.mail: [karthiga@srmist.edu.in](mailto:karthiga@srmist.edu.in)  
Phone: +91- 9841615368
2. Prof. K. Ramamurthi  
Former Professor  
Department of Physics and Nanotechnology  
SRM Institute of Science and Technology  
Kattankulathur, India  
E.mail: [krmurthin@yahoo.co.in](mailto:krmurthin@yahoo.co.in)  
Phone: +91- 9499009516
3. Prof. K. Iyakutti  
Emeritus Professor  
Dep. of Physics & Nanotechnology  
SRM IST  
Kattankulathur, India  
E.mail: [iyakutti@gmail.com](mailto:iyakutti@gmail.com)  
Phone: +91- 9443458568

## Declaration

I hereby declare that the information provided above is true and correct to the best of my knowledge.

*Lathapriya V*

Place: Tiruppur

(Lathapriya V)