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DOB: 21<sup>st</sup> DECEMBER 1985  
Nationality: Indian

### EDUCATION

- |                   |   |
|-------------------|---|
| 2011/09 – 2016/02 | <b>Doctorate in Energy Systems Engineering</b><br><i>Under supervision of Dr. Sangaraju Shanmugam,</i><br>Daegu Gyeonbuk Institute of Science & Technology (DGIST),<br>Republic of Korea. |
| 2008/08 – 2010/06 | <b>Master of Technology in Nano Technology</b> , 7.81 CGPA with First Class<br>Anna University of Technology Coimbatore, India  |
| 2006/08 – 2008/04 | <b>Master of Physics</b> , 8.34 CGPA with First Class<br>Bishop Heber College, Bharathidasan University, India  |

### CURRENT RESEARCH

Development of functionalized nanomaterial's for various energy storage applications

- Flexible energy storage device for smart textile and wearable technology.
- Novel perovskite solid state electrolyte in solid state lithium battery.
- Highly efficient bi-functional catalyst in rechargeable lithium air battery.
- High capacity anode material in Li-ion battery.
- Highly stable cathode material performance in Li-S battery.
- High energy density anode and cathode material in Li-ion capacitor.

Various synthesis routes are adopting to prepare electrode materials such as solid-state reaction, hydrothermal, electro-spinning, green chemistry, and co-precipitation etc.

### RESEARCH INTEREST

To pursue research in the area of “Material Science” to exploit in various electrochemical applications: Li-ion batteries/capacitors, Metal-air-batteries, Solid state batteries Supercapacitors, Redox flow batteries, Photovoltaic powered Water Electrolyzer, PEMFCs, CO<sub>2</sub> electrochemical reduction, and CO<sub>2</sub> capture.

### AWARDS/FELLOWSHIP

- |                         |   |
|-------------------------|---|
| 2011/09 – 2016/02       | <b>Ministry of Education, Science and Technology of Korea</b><br>Full stipend for qualified candidate to pursue education in<br>DGIST, Republic of Korea. |
| 2014/10/05 – 2014/10/09 | <b>225<sup>th</sup> ECS and SMEQ Joint International Meeting, Mexico (2014)</b><br>Travel Grant for highly motivated students in research, Mexico.        |

## WORK EXPERIENCE

- 2018/09 – Till now **Assistant Professor**,  
Division of Physics and Semiconductor Science,  
Dongguk University, South Korea.
- 2016/03 – 2018/08 **Postdoctoral Researcher**,  
Division of Nano and Energy Convergence Research,  
Daegu Gyeongbuk Institute of Science & Technology (DGIST), South Korea.
- 2011/09 – 2016/02 **PhD student**, DGIST, South Korea.
- 2011/01 – 2011/06 **Lecturer**,  
Materials Science Engineering Department,  
CARE- Centre for Applied Research and Education- School of Engineering,  
India.
- 2010/01 – 2010/05 **Project student**,  
Lithium-ion Electrodes Section, Energy Systems Group,  
Vikram Sarabai Space Centre (VSSC), Indian Space Search Organization (ISRO)  
Department of Space (DOS), India

## PROJECTS INVOLVED

### 1. 2017/03 – 2018/08

Project name: Smart and wearable fabric for health monitoring applications

Principal Researcher: **Dr. Jae Hyun Kim**

Division of Nano and Energy Convergence Research, DGIST, South Korea

Objectives:

- To develop flexible energy storage system for wearable healthcare technology.
- Develop high c-rate and long cycle stability anode material.

### 2. 2016/03 – 2016/12

Project name: Advanced material development for Li-ion capacitor for energy storage applications

Principal Researcher: **Dr. Jae Hyun Kim**

Division of Nano and Energy Convergence Research, DGIST, South Korea

Objectives:

- To enhance the capacity and rate performance of proposed anode materials.
- To achieve the maximum energy density requirement for electric vehicles

### 3. 2011/ 09 – 2016/02

Project name: R & D Program of the Ministry of Education, Science and Technology of Korea

Supervisor: **Dr. Sangaraju Shanmugam** - Associate Professor

Department of Energy System Engineering, DGIST

Adjunct Associate Professor - Applied Physical Chemistry, Waseda University, Japan.

Objectives:

- Develop high surface area unconventional nanocarbons for supercapacitor applications
- Develop bi-functional catalyst for rechargeable Zinc-air battery applications.

## PUBLICATIONS (Q1 JOURNALS)

1. P. Ramakrishnan, H. Im, S.H. Baek, J.I. Sohn\* *Isr. J. Chem.* 59, 1-13 (**invited article**).
2. P. Ramakrishnan, J. I. Sohn, J. Sanetuntikul, J. H. Kim\* *Electrochim. Acta.* 306 (2019), 617-626.
3. P. Ramakrishnan, H. Kwak, Y-H. Cho, J. H. Kim\*, *Chemelectrochem*, 5 (2018) 1-8 (**highlighted as cover feature**).
4. P. Ramakrishnan, S. Shanmugam, J. H. Kim\*, *ChemSusChem*, 10 (2017) 1554-1562.
5. P. Ramakrishnan, S.H. Baek, Y. Park, and J. H. Kim\*, *Carbon*, 115 (2017) 249-260.
6. P. Ramakrishnan, S. Shanmugam\*, *J. Power sources*, 316 (2016) 60-71.
7. P. Ramakrishnan, S. Shanmugam\*, *ACS Sustainable Chem. Eng.*, 4 (2016) 2439-2448.
8. P. Ramakrishnan, S.-G. Park, S. Shanmugam \*, *J. Mater. Chem. A*, 3(2015), 16242-16250
9. P. Ramakrishnan, S. Shanmugam\*, *RSC Advances*, 4 (2014) 59633-59636.
10. P. Ramakrishnan, S. Shanmugam\*, *Electrochim. Acta* 125 (2014) 232-240.
11. F. C. R. Ramirez, P. Ramakrishnan, Z. P. Flores-payag, S. Shanmugam\*, C. A. Binag\*, *Synthetic Metals*, 203, (2017), 65-72.
12. M. Prabu, P. Ramakrishnan, P. Ganesan, A. Manthiram\*, S. Shanmugam\*, *Nano Energy*, 15 (2015) 92-103.
13. P. Ganesan, P. Ramakrishnan, M. Prabu, S. Shanmugam\*, *Electrochim. Acta* 20 (2015) 63-69.
14. M. Prabu, P. Ramakrishnan, S. Shanmugam\*, *Electrochemi. Commun.*, 41 (2014) 59-63.
15. M. Prabu, P. Ramakrishnan, H. Nara, T. Momma, T. Osaka, S. Shanmugam\*, *ACS Applied Material & Interfaces* 6 (2014) 16545-55.
16. P. Carol, P. Ramakrishnan, B. John, C. Gouri\*, "*J. Power Sources*, 196 (2011) 10156–10162.

## PATENTS

1. P. Ramakrishnan, S. Shanmugam, Korean Patent. **File no. 2015-0151803.**
2. P. Ramakrishnan, S. Shanmugam, Korean Patent. **File no. 2014-0083601.**

## TECHNICAL PRESENTATIONS

1. P. Ramakrishnan, S. Shanmugam, "66<sup>th</sup> Annual meeting of the International society of Electrochemistry" Oct. 4-9, **2015**, Taipei, Taiwan.
2. P. Ramakrishnan, S. Shanmugam, S.-G. Park,, "Korean Electrochemical Society Fall meeting", Nov. 8-10, **2012**, Jeju, Korea.
3. P. Ramakrishnan, S. Shanmugam, S.-G. Park "The 5<sup>th</sup> international workshop on Advanced Electrochemical Power Sources" 16-18 Nov, **2012**, Kumamoto, Japan.
4. R. Prakash, S. Babu, C. Gouri, "International Conference on recent trends in Material Science

*and Technology (ICMST-2010)*”, Indian Institute of Space Science and Technology (IIST), 29th Oct.2010, Kerala, India.

### INVITED TALK/SEMINAR

1. Invited Talk in the title “**Novel Nanocomposite Materials for Energy Storage and Conversion Applications**” in Department of Physics at Hanyang University on 03<sup>rd</sup> Apr.2019, Seoul, Republic of Korea.
2. Invited Talk in the title “**Novel nanocomposite material for Alkaline Water electrolyzer applications**” in 5<sup>th</sup> INTERNATIONAL CONFERENCE ON ADVANCED ELECTROMATERIALS (ICAE) on 07<sup>th</sup> Nov.2019, Jeju, Republic of Korea.

### SOCIAL PROFILES

- ORCID : [0000-0002-0868-7543](https://orcid.org/0000-0002-0868-7543)
- RESEARCHERID: F-5163-2014
- Active member in electrochemical society (**ECS**) and Korean electrochemical society(**KECS**)