**Reesha K. V.**

CurriculumVitae

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# Education

### Ph.D. (Biomedical Engineering), 2022

National Tsing Hua University, Hsinchu City, Taiwan

### M.Phil. (Master of Philosophy in Biomedical Technology), 2016

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Kerala, India

### M.Sc. (Biopolymer Science), 2014

Cochin University of Science and Technology (CUSAT), Kerala, India

### B.Sc. (Biochemistry), 2012

Calicut University, Kerala, India

# Research Experience

1. Research Fellow with Prof. Hsin Cheng Chiu

National Tsing Hua University, Department of Department of Biomedical Engineering and Environmental Sciences, Taiwan (September 2016- Present)

**Major Research Topic**

* Development of Tumor Microenvironment Responsive oxygen self-sufficient oil droplet nanoparticles for enhanced photothermal/photodynamic combination therapy against hypoxic tumors
* Development of second biological window activated nanoparticles such as gold-graphene quantum dot hybrid structure and reduced graphene oxide nanoparticle encapsulated drug molecules for different cancer models.

**Specific Works and Technical Skill Sets:**

* Actively engaged in design and development of various polymeric and inorganic nanostructures for Nano medicine for health care.
* Fabrication of Smart Nano carriers for drug delivery, on demand site-specific release of gaseous molecules for cancer therapy.
* Explored polymeric nanoparticle fabrication, Investigated the drug loading capacity, degradation and stability studies, In-vitro cellular evaluation of both biocompatibility and cytotoxic evaluation of drugs on cancerous cells using different techniques such as flow cytometry and Laser Scanning Confocal Microscopy.
* Hands on experience on *In-vivo* biodistribution of nanoparticles accumulation on mice organs and tumor by IVIS instrument.
* Hands on experience in small animal care (mice) and their tumor model studies, Histopathological studies by H&E and immunohistochemistry staining, Blood biochemical evaluation of mice

1. Research Assistant with Dr. Jayabalan and Dr. Shivaram Selvam

Department of Polymer Science and Engineering, Sree Chitra Tirunal Institute for Medical Sciences and Technology, India (August 2015 - July 2016)

**Specific Works and Technical Skill Sets:**

❖ Synthesis and characterization of hydrogels and nanogels for biomedical applications.

❖ Development of PVA based hydrogels for aqueous vitreous fluid tissue engineering.

1. Technical Assistant with Dr. A N Jyothi

ICAR-Central Tuber Crop Research Institute, India (June 2015 – July 2015)

**Specific Works and Technical Skill Sets:**

❖ Performed synthesis and characterization of starch-based hydrogels for controlled plant

Nutrient Delivery.

1. Research Assistant with Dr. Bindu Jaganath

ICAR-Central Institute of Fisheries Technology, India (April 2014 – August 2014)

**Specific Works and Technical Skill Sets:**

* Developed biopolymer (chitosan) based anti-microbial packaging polyethylene film for fresh fish packaging
* Natural chitosan polymer isolation from marine shrimp by chemical extraction method

**Honors and Awards**

Poster award, Annual Meeting of Biomaterials and Controlled Release Society in Taiwan (2021)

Poster award, Annual Meeting of Biomaterials and Controlled Release Society in Taiwan (2020)

NTHU International Student Scholarship for Ph.D., National Tsing Hua University

Secured 6th rank in MSc biopolymer science, 2014 from Cochin University of Science and Technology, Cochin, Kerala

Poster award, National Conference on Biopolymers; Biopolymers & Green Composites BPGC2014 (2014)

**Publications**

Summary: Total number - 5, Citations - 144, h-index - 4, i10-index- 3 (from Google scholar)

1. Vayalakkara RK, Lo CL, Chen HH, Shen MY, Yang YC, Sabu A, Huang YF, Chiu HC. “Photothermal/NO combination therapy from plasmonic hybrid nanotherapeutics against breast cancer “. J Controlled Release.345:417-432. **doi.org/10.1016/j.jconrel.2022.03.030** (Impact Factor 9.776)
2. Kv, R., T. I. Liu, I. L. Lu, C. C. Liu, H. H. Chen, T. Y. Lu, W. H. Chiang and H. C. Chiu (2020). "Tumor microenvironment-responsive and oxygen self-sufficient oil droplet nanoparticles for enhanced photothermal/photodynamic combination therapy against hypoxic tumors." J Control Release 328: 87-99**. *doi: 10.1016/j.jconrel.2020.08.038*** (Impact Factor 9.776)
3. Latha, A. V., M. Ayyappan, A. R. Kallar, R. V. Kakkadavath, S. P. Victor and S. Selvam (2020). "Fluorescence imaging of nitric oxide in living cells using o-phenylenediamine rhodamine based polymeric nanosensors." Mater Sci Eng C Mater Biol Appl 108: 110463. ***doi: 10.1016/j.msec.2019.110463***. (Impact Factor 7.328)
4. Shen, M. Y., T. I. Liu, T. W. Yu, R. Kv, W. H. Chiang, Y. C. Tsai, H. H. Chen, S. C. Lin and H. C. Chiu (2019). "Hierarchically targetable polysaccharide-coated solid lipid nanoparticles as an oral chemo/thermotherapy delivery system for local treatment of colon cancer." Biomaterials 197: 86-100. ***doi: 10.1016/j.biomaterials.2019.01.019*** (Impact Factor 12.479)
5. Reesha, K. V., S. K. Panda, J. Bindu and T. O. Varghese (2015). "Development and characterization of an LDPE/chitosan composite antimicrobial film for chilled fish storage." International Journal of Biological Macromolecules 79: 934-942. [***doi.org/10.1016/j.ijbiomac.2015.06.016***](https://doi.org/10.1016/j.ijbiomac.2015.06.016) (Impact Factor 6.953)

# Important Links

Google Scholar ID: https://scholar.google.com/citations?user=Ttw8lyUAAAAJ&hl=en

Research Gate ID: [https://www.researchgate.net/profile/Reesha-K-V](about:blank)

LinkedIn ID: www.linkedin.com/in/reesha-kv-8459689a

# Personal Profile

**Father’s Name :** Mr. Ravikrishnan

**Gender :** Female

**Date of Birth :** 17-10-1991

**Hobbies :** Reading, Music

**Passport Number :** M4984409

**Address :** Kakkadavath Vayalakkara Thalassery, Kannur

Kerala, India.

# Reference

1. **Prof. Hsin Cheng Chiu**

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National Tsing Hua University 101, Sec. 2, Kuang Fu Road, Hsinchu 30013, Taiwan  
Email: [hscchiu@mx.nthu.edu.tw](mailto:hscchiu@mx.nthu.edu.tw)

1. **Dr. Roy Joseph**

Scientist G,

Division of Polymeric Medical Devices

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST),

Kerala, India

Email: [rjoseph@sctimist.ac.in](mailto:rjoseph@sctimist.ac.in)

1. **Dr. Shivram Selvam**

Senior Research Scientist

Pandrorum Technologies Pvt. Ltd

Karnataka, India

Email: selvam.shivaram@gmail.com

1. **Dr. Vineeth Vijayan**

Research Scientist

Department of Material Science and Engineering,

University of Alabama at Birmingham,

Birmingham, Alabama

United States

Email:vineeth@uab.edu

### Dr. J Bindu

### Principal Scientist

### Department of Packaging

### Indian Council of Agricultural Research- Central Institute of Fisheries Technology

### Kerala, India

### Email: [binduj@ciftmail.org](mailto:binduj@ciftmail.org), bindujaganath@gmail.com