

R. RAJESH, PhD



Postdoctoral Researcher

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Department of Chemical Engineering

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College of Engineering

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National Chung Cheng University

Chiayi, Taiwan 62102

SUMMARY

Materials chemist with 11 years of experience in leading and conducting research projects in academic research laboratories. Hands-on experience in **nanomaterials and polymer composites** development for **biomedical electrical and magnetic applications**.

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher **Aug,2016- till date**

Department of Chemical Engineering,

College of Engineering

National Chung Cheng University, Chiayi, Taiwan

Job Responsibilities: (Fabrication and characterization of biomaterials for biomedical applications, Guiding Masters students, Writing/Editing/Proof reading journal papers and Published 36 journal papers)

Assistant Professor- Chemistry **Sep,2015- Aug,2016**

Department of Science and Humanities,

Karpagam College of Engineering, Coimbatore, India

Job Responsibilities: (Taught Engineering Chemistry and Environmental science, and Associated with preparation of question papers for exams)

Research Intern **Aug,2014- Oct,2014**

Department of Chemical Engineering,

College of Engineering,

Kyung Hee University, South Korea

Job Responsibilities: (Developed epoxy composites for EMI shielding applications and PVDF materials for lithium ion battery applications, and published 1 journal papers and 1 book chapter)

Research Associate **June,2011- May,2015**

Department of Chemistry,

School of Advanced Sciences,

VIT University, Vellore, India

Job Responsibilities: (Assisted Bachelors students to carry out the experimental works in the chemistry lab)

Extractor **July,2010- Jan,2011**

Scope eKnowledge Center, Chennai, India

Job Responsibilities: (Handled ISIS draw tool to draw chemical structure and Converted organic chemical reactions into coding)

EDUCATION

Ph.D. in Chemistry **Dec'15**

VIT University, Vellore, India

Area of Specialization: Biomaterials, Material Science, Chemistry

Dissertation title: Development of Tricomponent Composite Scaffolds and their *in vitro* Study for Bone Tissue Engineering

Masters (MSc) in Chemistry **Apr'10**

University of Madras, Chennai, India

Bachelors (BSc) in Chemistry **Apr'08**

University of Madras, Chennai, India

LEAD PROJECTS

- Development of **Carbon nanotube (CNT), Graphene oxide and Hydroxyapatite**-incorporated polymeric 3D scaffolds for bone tissue engineering (*Filed 2 patents and published 8 papers & 2 book chapters*)
- Study on Solid lipid nanoparticles and liposomes-based drug delivery system for Alzheimer's disease, Parkinson's disease and brain cancer treatment (*Published 26 papers*)
- Differentiation of induced pluripotent stem cells (iPSCs) into neurons and pancreas (*Published 6 papers*)
- Development and characterization of PVDF and silicon nanowire-based materials for lithium ion battery application (*Poster presentation*)
- Study on CNT-functionalized organic compounds for electrical and magnetic applications (*Published 2 papers*)
- Development of coir pith based biodegradable packing materials (*Published 1 papers*)

SKILLS

Management: Team Leader, Project Management, Time management, Presentation skills

Research: UV-VIS-NIR Spectroscopy, TG/DTA, FT-IR Spectroscopy, Powder XRD, XPS, FE-SEM and EDAX, TEM, Flowcytometry, Universal Testing Machine, Collaborating with people, Critical thinking skills, Detail oriented, Problem solving, Analysis, Verbal/written communication skill, Interpersonal communication, Publication.

Writing: Technical Writing, Editing, Proof reading, Proposal writing

Computer skills: Word Processing and Writing software- MS Office, Adobe Acrobat Pro, GraphPad Prism, Origin, Cemdraw, SigmaPlot

RESEARCH PUBLICATIONS

- Yung-Chih Kuo, I-Yin Chen, **R. Rajesh**, Astragaloside IV-and nesfatin-1-encapsulated phosphatidylserine liposomes conjugated with wheat germ agglutinin and leptin to activate anti-apoptotic pathway and block phosphorylated tau protein expression for Parkinson's disease treatment, **Materials Science and Engineering: C**, 2021, 129, 112361.
 - Yung-Chih Kuo, Chien-Wei Tsao, **R. Rajesh**, Dual-sized inverted colloidal crystal scaffolds grafted with GDF-8 and Wnt3a for enhancing differentiation of iPS cells toward islet β -cells, **Journal of the Taiwan Institute of Chemical Engineers**, 2021, 126, 371-382.
 - Yung-Chih Kuo, I-Wen Ng, **R. Rajesh**, Glutathione-and apolipoprotein E-grafted liposomes to regulate mitogen-activated protein kinases and rescue neurons in Alzheimer's disease, **Materials Science and Engineering: C**, 2021, 127, 112233.
 - Yung-Chih Kuo, He-Cheng Tsai, **R. Rajesh**, Glutathione-liposomes carrying ceftriaxone, FK506 and nilotinib to control overexpressed dopamine markers and apoptotic factors in neurons, **ACS Biomaterials Science and Engineering**, 2021, 7, 3242-3255.
 - Yung-Chih Kuo, I-Hsin Wang, **R. Rajesh**, Use of leptin-conjugated phosphatidic acid liposomes with resveratrol and epigallocatechin gallate to protect dopaminergic neurons against apoptosis for Parkinson's disease therapy, **Acta Biomaterialia**, 2021, 119, 360-374.
 - For remaining publications: <https://scholar.google.com/citations?user=v3IeuSQAAAAJ&hl=en>
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