*Covid-19 Vaccinated

Mukeswaran Balachandran

+91 9176685374
bmwmukesh@gmail.com
linkedin.com/in/mukeshnonoite

Postgraduate of Nanotechnology

Highly motivated and results-driven nanotechnologist with experience in the development and implementation of innovative nanotechnologies. Possessing a strong background in material science, I have a proven track record of successfully leading projects from conception to completion. I am constantly seeking new challenges and opportunities to expand my skill set and make a meaningful impact in the field of Science & Technology.

EDUCATION

Masters in Nanotechnology - M.Tech **9.37/10**

***SRM Institute of Science & Technology, India* 2020 - 2022**

Bachelors in Nanotechnology - *B.Tech* ***8.31/10***

Bharath Institute of Higher Education & Research, India 2014 - 2018

EXPERIENCE

Independent Researcher **December'22 - Present**

Freelancing

- ➔ Industrial integration of Nanotechnology processes
- ➔ Consulting research operations & overseeing Cleanroom (ISO 8) maintenance
- ➔ Scale up from lab to fab - Materials Sciences

Visiting Researcher - Student **March '22 - October '22**

***Flinders Institute for Nanoscale Science & Technology* - Flinders University, Australia**

Flexible Organic Photovoltaic cell

The horizons of BHJ based PPDT2FBT: $PC_{61}BM$ organic photovoltaic cells have been explored with environmentally friendly solvent O-Xylene, yielding high efficiencies.

- ➔ Co-managed & maintained the isolated Glove Box environment and laboratory inventory
- ➔ Lead market research for the photovoltaics industry
- ➔ Formulated polymers & bulk heterojunctions and synthesized Sol-gels
- ➔ Developed and followed efficient substrate cleaning process
- ➔ Nanofabricated flexible electronics using different processing techniques
- ➔ Regularly conducted characterisation & data analysis.
- ➔ Extensively researched and optimized fabrication parameters, creating benchmarks.
- ➔ Self-trained the techniques of Roll to Roll processing (R2R)
- ➔ Demonstrated my ability to collaborate effectively with cross-functional teams and to communicate complex technical concepts to a non-technical audience.

PERSONAL DETAILS

- Date of Birth: 25/12/1996
- Gender: Male

LANGUAGES KNOWN

- English
- Tamil
- German

TECHNICAL SKILLS

- Laboratory & inventory Management
- Polymer formulations
- DC & RF Magnetron Sputtering
- Thermal Evaporation
- Contact Angle measurement
- Scanning Electron Microscopy
- E-Beam Lithography
- Electrospinning
- Dip coating
- Sol Gel synthesis
- Spin coating

Research Intern **September '21 - October '21**

Advanced Material Laboratory **- Council of Scientific & Industrial Research - CLRI, India**

Ag-SiO_2 NP Photocatalytic Disinfectant for leather processing wastewater

Ag-SiO_2 photocatalytic membrane was synthesized and functionalized with Dopamine for developing a disinfectant for leather processing wastewater.

- ➔ Formulated and synthesized photocatalytic membranes
- ➔ Performed bacterial cultures
- ➔ Operated the SEM and XRD for clients

Academic Researcher **September'20 - October'22**

Dept. of Physics & Nanotechnology **- SRM Institute of Science & Technology**

Biocompatible hydrophilic PMMA OMMT Nanofiber

Biocompatible Poly(Methyl Methacrylate) - Organo-Montmorillonite Nanofiber membrane for aiding water retention in the kidney was developed.

Personalized Nanomedicine for Breast Cancer Therapy using Poly (lactic -co - glycolic acid) Nanoscaffolds

PLGA Nanoformulations were synthesized by double emulsion solvent evaporation technique and nanoprecipitation technique for encapsulating drugs for breast cancer therapy.

- ➔ Managed laboratory inventory
- ➔ Conducted commercial & market research for the nanofiber market
- ➔ Assisted with TEM operations
- ➔ Formulated and synthesized Sol-gels
- ➔ Fabricated nanofiber membranes
- ➔ Performed Electrospinning for external teams
- ➔ Guided undergrad students to conduct experiments

Coating Formulation Chemist & Operations Manager **May'18 - March'19**

Coating Formulation Chemist **April'19 - September'20 (Remote)**

Chanmuke Engineering Co

- ➔ Lead a team of lab technicians and interns (>10)
- ➔ Managed production operations of multiple projects simultaneously
- ➔ Regularly lead market research & analysis
- ➔ Formulating anti-rust and aesthetic coatings (Additive technology)
- ➔ Characterizing polymer formulations
- ➔ Blending of additives with paint
- ➔ Hosted weekly stakeholder meetings
- ➔ Clientele communications during production period
- ➔ Supervising coating operations & performing quality checks
- ➔ Managing Laboratory inventory and performing primary maintenance
- ➔ Strategized operations of entire asset lifecycle from concept to scrap, resulting in efficient time & cost management of production

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- **Scanning Tunneling Microscopy**
- **X-Ray Diffractometry**
- **UV-Visible Spectrometry**
- **Atomic Force Microscopy**
- **FTIR**

NON-TECHNICAL SKILLS

- **Project management**
- **Production supervision**
- **Clientele communications**
- **Problem analysis and solutions**
- **Data collection & analytics**
- **Data visualization**
- **MS Office**
- **Origin**
- **Critical Thinking**

CHAMPIONSHIPS

ROBOTRYST 2014
Unmanned Aerial Vehicle

Bharath Mission to Mars 2016
All Terrain Vehicle

Academic & Student Researcher

Bharath Institute of Higher Education & Research, India

Center of Excellence for Patterned Multiferroics & Nanotechnology **May '15 - May '18**

Nickel oxide (NiO) Thin Films for supercapacitor NiO Thin Films were deposited on glass substrates and the Non-stoichiometric effects of the thin films were studied for Supercapacitor applications.
ZrO_2 Dental implant Endosteal implant was designed and fabricated with ZrO_2 with CNC precision machining
SiO_2 and Ag/SiO_2 Nanoparticle Core-Shell structured SiO_2 and Ag/SiO_2 Nanoparticles were synthesized for Catalytic Reduction
Graphene oxide from Agro waste Graphene oxide was synthesized from the waste product of Sugar cane.
Aluminum Nitride Thin Films The Microstructural & Nanomechanical properties of the Thin Films deposited on low carbon steel were studied.

- ➔ Co-Managed Sputtering laboratory and performed primary maintenance
- ➔ Managed laboratory inventory and research funding approvals by the Chancellery
- ➔ Forumated Sol-gel and executed coating procedures with several techniques for external clients and internal teams
- ➔ Created benchmarks for coating parameters for specific applications
- ➔ Operated the tabletop SEM for external clients and internal teams

Research Centre for Robotics **September '14 - May '18**

- ➔ Designed and built unmanned aerial vehicles for surveillance
- ➔ Lead a robot combat team for domestic championships and devised strategies
- ➔ Supervised and guided new joiners of the robotics club until they were designated into their teams
- ➔ Performed regular primary laboratory maintenance
- ➔ Co-Built a 3D Printer

Operations Manager & Supervisor *(Part time)* **2014 - 2018**

Chanmuke Engineering Co

- ➔ Managed Pilot Operations of manufacturing process
- ➔ Performed Quality checks and coating supervision
- ➔ Strategized Operations resulting in efficient time management and cost management of production
- ➔ Overseen employee roster schedule

CONFERENCES ATTENDED

- **INST Annual Conference 2022**, Flinders Tonsley, Australia
- **Tool Tech 2018**, IMTEX Bangalore, India
- **ICAN 2016**, VIT University, India
- **Tool Tech 2016**, IMTEX Bangalore, India

SHORT COURSE CERTIFICATIONS

- **Google Project Management** - *Google + Coursera*
  In Progress
- **Certified Peer Reviewer** *-Elsevier*
  April 2021
- **The Science of Medicines** *-Monash University, Australia*
  July 2020 - 6 weeks course
- **Nanotechnology for Health** *-University of Twente, Netherlands*
  June 2020 - 4 weeks course

PUBLICATIONS

Microstructural and Nanomechanical Properties of Aluminum Nitride (AIN) Thin Films Deposited by RF Magnetron Sputtering

American Scientific Publishers Vol. 24 No.8

https://doi.org/10.1166/asl.201 8.12209

Personalized Nanomedicine for Breast Cancer Therapy Using Poly (lactic-Co-Glycolic Acid) Nanoscaffolds: A perspective

Trends in Biomaterials & Artificial organs Vol. 35 No.3

https://www.biomaterials.org.in/tibao/index.php/tibao/article/view/51

REFERENCES

Dr. David Lewis - *Flinders Institute of Nanoscale Science & Technology, Australia*
Founder - david.lewis@flinders.edu.au

Dr. Mats Andersson - *Flinders Institute of Nanoscale Science & Technology , Australia*
Director - mats.andersson@flinders.edu.au

Dr. Mani Rahulan - *SRM Institute of Science & Technology, India*
Asst.Professor - manirahk@srmist.edu.in