UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE : 4451**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia**

Scientist- in - charge: Prof. Giorgio Provolo

[MOHAMMED MONSOOR SHAIK]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	SHAIK
Name	MOHAMMED MONSOOR
Date of birth	27, AUGUST, 1988

PRESENT OCCUPATION

Appointment	Structure
NOT EMPLOYED	N.A

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	MASTER OF SCIENCE (BIOTECHNOLOGY)	BANGALORE UNIVERSITY	2010
PhD	BIOMEDICAL ENGINEERING	BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE-PILANI, INDIA	2019

FOREIGN LANGUAGES

Languages	level of knowledge
ENGLISH	PROFICIENT
HINDI	MOTHER TONGUE
TELUGU	MOTHER TONGUE

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2013	**"Best Paper Presentation"** on "Preparation and characterization of Chitosan Nano- Silver bio-composites for wound healing applications" held at International Conference on Nano Materials: Science, Technology, and Applications, India 2013.

TRAINING OR RESEARCH ACTIVITY

Research activity (Ph.D.,)

Studies on Fabrication of Bilayer Scaffolds Incorporating Antibacterial and Antioxidant Agents for Wound Healing Applications

- Fabricated the drug loaded tissue engineering scaffolds for chronic wounds by using novel melt-down neutralization method
- Developed "melt-down neutralization method" which ensured the homogenous distribution of the drugs across the scaffolds, facilitating the sustained release of drug molecules.
- Developed bilayer scaffolds with a chitosan layer doped with silver, and collagen layer doped with various polyphenol based anti-oxidants. The wound healing properties of these bilayer scaffolds were studied in *in vitro* and *in vivo* (Wistar rats) systems.
- Synthesis and characterization of inorganic (Hydroxyapatite, Silver) and organic (chitosan) nanoparticles.
- Formulated silver doped chitosan hydrogel for wound healing applications

Technical skills and competences

The research activity carried out in all these years has required the use of multidisplinary approaches, ranging from environmental and biomedical engineering, nanotechnology to bioimaging to animal studies and molecular biology procedures. I have gained experience in the following fields mentioned below.

- **Environmental Engineering:** Anaerobic fermentation, Reactor scale-up to remediate the bauxite land fill, bioleaching of metals
- **Material Science:** Fabrication of polymeric matrices for therapeutic applications ranging from wound healing to bone regeneration
- **Nanotechnology:** Synthesis of inorganic (Hydroxyapatite, silver) and organic (chitosan) nanoparticles
- **Characterization techniques:** X-ray diffraction (XRD), Fourier transform infrared spectroscopy(FTIR), Thermogravimetric analysis (TGA), Differential scanning calorimetry (DSC), Brunauer-Emmett-Teller (BET) surface area, Dynamic light scattering (DLS), Zeta potential, Rheometer, fluorescence spectroscopy, flame photometer, , atomic absorption spectroscopy(AAS), transmission electron microscopy (TEM) and Scanning electron microscopy (SEM)
- **Biological Sciences**
  - **Microbiology Techniques:** Isolation and characterization of bacteria/yeast, 16s rRNA sequencing, culturing of bacterial cells, staining methods, cultivation of biofilms. Experience of working in Biosafety level-2 (BSL-2) laboratories.
  - **Cell culture Technique :** Culturing and maintenance of animal cells
  - **Animal Studies:** Experienced in handling animals (Wistar Rats) and *in vivo* studies
  - **Molecular Techniques:** Isolation and purification of DNA & RNA, restriction digestion, bacterial cloning, PCR, RT PCR, transformation and transfection method.

PROJECT ACTIVITY

Year	Project
2018-2019	***Bioremediation of Red mud using acidogenic fermentation byproducts and by Biopiling*** **Project fellow (12th July 2018 - 30th Sep 2018)** **Research Associate (01st Oct 2018 - 30th Nov 2019)** • Designing and establishing a treatment process to neutralize highly alkaline redmud based on ABSTC regulatory objectives • Generating data to substantiate the treatment process, regarding the safety and efficiency of waste and communicate them in technical reports and presentations • Planning, carrying out the process trials in laboratory and pilot scale • Scaling up the treatment process to neutralize redmud on the landfill • Designing and validating the effluent treatment system by using algal ponds for safe disposal of the leachate • Liaising with suppliers of raw materials/equipment

CONGRESSES AND SEMINARS

Date	Title	Place
Dec 5th - 7th, 2013	International Conference on Nanomaterials: Science, Technology and Applications(ICNM'13)	Chennai, India

PUBLICATIONS

Articles in reviews
Antioxidant-antibacterial containing bi-layer scaffolds as potential candidates for management of oxidative stress and infections in wound healing, Journal of Materials Science: Materials in Medicine, Springer, 2019, (30) 1-13.
Ellagic acid containing collagen-chitosan scaffolds as potential antioxidative bio-materials for tissue engineering applications, International Journal of Polymeric Materials and Polymeric Biomaterials, Taylor & Francis Group, 2018, 1-8.
Novel melt-down neutralization method for synthesis of chitosan-silver scaffolds for tissue engineering applications, Polymer Bulletin, Springer, 2016, (73) 841-858.
Self-activated fluorescent hydroxyapatite nanoparticles: a promising agent for bioimaging and biolabeling, ACS Biomaterials Science & Engineering, ACS Publications, 2016, (2) 1257-1264.
Nanomaterial-based approaches for prevention of biofilm-associated infections on medical devices and implants, Journal of nanoscience and nanotechnology, American scientific publisher, 2015, (15) 10108-10119.

OTHER INFORMATION

Affiliation with scientific societies:

INTERNATIONAL WATER ASSOCIATION (2019-PRESENT)

Teaching Assistance during Ph.D at BITS Pilani (Jan 2012 - Apr 2018)

- Instrumental Methods of Analysis Laboratory: Biophysical characterization techniques: X-ray diffraction, FT-IR spectroscopy, Atomic Absorption spectroscopy, Flame photometry, Fluorescence spectrometry, UV-Visible spectroscopy, and Thin Layer Chromatography.
- Microbiology Laboratory: Basic microbiological techniques.
- Measuring Techniques-I/ Biology laboratory: Basic techniques of quantitative biology.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: MONZA, 10/01/2020.

SIGNATURE