

Aanchal Alagh

M.Tech, PhD (Nanotechnology)

Contact

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Technical Proficiencies

Software & Tools:

- C/C++, MS Office Suite, Adobe Illustrator, EC-lab Origin, Share Point

Instrument handling:

- SEM, FESEM, Raman, UV-Vis, DLS, EDX, UV-vis, Gas Chromatography, Chemical vapor deposition system, Sputter deposition system

R&D Expertise:

- Design of experiments, Cyclic Voltammetry (CV), Impedance Spectroscopy (EIS), gas sensors, nanomaterials synthesis, Transition metal dichalcogenides, Thin-films deposition, Lithography & Photolithography, clean room protocols, Wet-chemistry, Formulations, Siloxy, Epoxy coatings, mechanical testing techniques.

Project Management & Soft Skills:

- Data evaluation, Training, Strategic Planning, SOPs writing, Project Planning, Technical Report writing, Problem-solving, Time management, Research ethics.

Summary

I am an analytical Engineer with a Ph.D. in Technologies for nanosystems, bioengineering, and energy. Over 5 years of extensive research experience in nanomaterial synthesis, characterization and application. Skilled in managing and leading interdisciplinary teams to deliver innovative solutions in nanotechnology and clean energy sectors. Proficient in project management, with a strong technical background in material science and chemical systems. Recognized for a collaborative approach and effective problem-solving skills in high-pressure environments.

PROFESSIONAL EXPERIENCE

Postdoctoral Fellow | University of Northern British Columbia, Department of Environmental Science

March 2024 - Present

Topic: Transforming Air Pollution into Safety: An Innovative Approach with RainIons Technology for CO₂ Reduction & climate Change Mitigation

- Leading the Project and investigating into RainIons Technology for air pollution reduction.
- Conducting comprehensive pollution reduction and CO₂ reduction tests and analysis.

MITACS Globalink Mentor

April 2024 - Present

- Support Globalink Research Interns from different countries in their transition to Canada. Address and resolve intern's queries, providing ongoing assistance and guidance.

Doctoral Research Scholar | Universidad Rovira I Virgili, Tarragona, Spain

Dec 2018 – Sept 2022

Thesis: Synthesis and gas sensing properties of transition metal dichalcogenides materials (TMDs) - **Grade: Excellent**

- Developed scalable synthesis methods for 2D TMDs via CVD and MBE techniques.
- Improved gas sensing performance of TMDs by functionalizing with metallic nanoparticles.
- Fabricated and characterized a variety of TMD-based gas sensors on different substrates.

Marketing & Communication:

- Project Management, Scientific Marketing, Presentations, Budgeting, Copy-editing, Social media, Webinar organization, Video content creation, Market assessment, Networking, Communication.

Honors & Awards

- **MITACS Accelerate scholarship** for Postdoctoral research (March 2024 - 2027)
- **Excellent cum laude** for PhD research work
- **MSCA COFUND** for Early-Stage Researcher (Dec 2018 - Sept 2022)
- **DST-DAAD Exchange fellow for exchange student** (Oct-Nov 2017)
- **Research fellowship for Master's thesis** awarded by ICMAB-UAB (Feb-July 2016)
- **First prize in Poster presentation**

Personal Highlights

- Self-driven and responsible
- Analytical thinking skills
- Adaptability and flexibility
- Collaborative and efficient
- Deadline oriented

Languages

- English
- Hindi
- Punjabi
- Spanish (Basic)

HOBBIES

- Travelling
- Painting

Research Intern | University of California, Riverside, USA

Department of Chemistry

Jan 2022 – March 2022

- Developed thin films of TMDs materials (MoS_2 , WS_2) using Molecular Beam Epitaxy (MBE) technique.

Research Intern | University of Cologne, Germany

Department of Inorganic Chemistry

Oct 2017 - Nov 2017

- Enhanced durability and mechanical properties of Icephobic-Hydrophobic coatings using spinel nanoparticles and PECVD method.

Project Research Engineer | Indian Institute of Technology

Mumbai, India

Jan 2017 - Feb 2018

- Developed Icephobic-hydrophobic coatings for aircraft glass windows (funded by **BOEING**)
- Created Low Emissivity coatings for strategic weapon platforms.

Master's Thesis | Universidad Autònoma de Barcelona,

ICMAB Bellaterra, Spain

Feb 2016 - July 2016

- Developed homogeneous layer of core-shell magnetic nanoparticles for arsenic removal from water.

EDUCATION

Doctor of Philosophy (Ph.D.) in Technologies for Nanosystems, Bioengineering, and Energy

Universidad Rovira i Virgili, Spain

| Sept 2022

Dual Degree in Bachelor of Technology (B.Tech) - Master of Technology (M.Tech) in Nanoscience & Nanotechnology

Amity University, India

| Dec 2016

ACHIEVEMENTS

- Published **9** research articles, including 4 as first author, all in high-impact journals.
- Presented posters and talks at several international conferences, including those organized by IEEE.