

Mona A. Abdelmoneem, MSc, PhD

MATERIALS CHARACTERISATION | NANOFABRICATION | CLEANROOM & LABORATORY OPERATIONS

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Google Scholar: <https://scholar.google.com.au/citations?hl=en&user=dM7gCcMAAAAJ>

PROFESSIONAL SUMMARY

PhD-qualified materials scientist and pharmacist with approximately 13 years of hands-on research laboratory experience in nanomaterials, polymer-functionalised systems, analytical characterisation and cleanroom-based nanofabrication. Experienced in operating scientific instruments, preparing and analysing samples, troubleshooting experimental challenges, maintaining detailed technical records, and following laboratory SOPs and chemical-safety procedures. PhD research at Monash University included cleanroom work at the Melbourne Centre for Nanofabrication (MCN), electrochemical etching, polymer synthesis and surface functionalisation. University lecturer and researcher with experience supporting and training students. Interested in contributing to reliable characterisation services, safe facility operations and technical capability development at ANFF-Qld.

CORE TECHNICAL SKILLS

- Materials characterisation: FTIR, UV–Vis and fluorescence spectroscopy, DLS, TEM, benchtop SEM, QCM, confocal laser scanning microscopy, HPLC and quantitative data analysis.
- Materials and nanofabrication: porous silicon nanoparticle fabrication by electrochemical etching; polymer synthesis; surface functionalisation; sample preparation; physicochemical characterisation.
- Scientific equipment and troubleshooting: instrument operation, monitoring, experimental troubleshooting, parameter optimisation, sample handling and interpretation of analytical results.
- Cleanroom and laboratory operations: cleanroom protocols, chemical handling, laboratory safety, housekeeping, contamination-conscious practices, sample and materials organisation.
- Quality and documentation: SOP/protocol adherence, technical records, data integrity and traceability, experimental documentation, technical reports, familiarity with GMP/GLP principles and Good Documentation Practice.
- Training and collaboration: laboratory teaching, student training and mentoring, technical communication, collaborative research, independent problem solving and project coordination.

PROFESSIONAL EXPERIENCE

PhD Researcher – Materials Science & Engineering / Nanomedicine | Monash University, Australia |
PhD completed 2025

- Conducted cleanroom-based nanofabrication at the Melbourne Centre for Nanofabrication (MCN), using electrochemical etching to fabricate porous silicon nanoparticles under controlled processing conditions.
- Operated specialised laboratory and characterisation equipment and monitored experimental parameters to support reproducible fabrication and reliable data generation.
- Developed polymer-functionalised nanoparticle systems through polymer synthesis and surface functionalisation; prepared samples and evaluated physicochemical properties.
- Applied analytical and characterisation techniques including HPLC, FTIR, UV–Vis and fluorescence spectroscopy, DLS, TEM, QCM and confocal microscopy.
- Investigated variations in material and formulation properties, analysed data, troubleshooted experimental issues and refined conditions to improve reproducibility.
- Maintained detailed records of procedures, sample information, experimental parameters and results; followed laboratory SOPs, chemical-handling requirements and institutional safety procedures.

- Prepared technical reports, manuscripts and presentations and collaborated with researchers and technical staff.

Research Fellow | TsNano, Victoria, Australia

Lecturer / Assistant Lecturer – Pharmaceutics | Faculty of Pharmacy, Damanhour University, Egypt

- Conduct research and support practical laboratory teaching in pharmaceutics and pharmaceutical sciences.
- Train and guide students in laboratory practices, experimental methods, safe working procedures and interpretation of results.
- Support laboratory activities, maintain experimental records and communicate technical concepts to learners with different levels of experience.

Research Intern – Cancer Therapy Research | Harvard Medical School, Massachusetts, USA

Assistant Laboratory Manager – Cancer Nanotechnology Research Laboratory (CNRL) | Alexandria, Egypt

EDUCATION

PhD, Materials Science and Engineering — Monash University, Australia | 2025

MSc, Pharmaceutical Sciences (Industrial Pharmacy) — Alexandria University, Egypt | 2018

BSc, Pharmaceutical Sciences (Distinction with Honours) — Alexandria University, Egypt | 2012

ADDITIONAL INFORMATION

- Publications: 13 peer-reviewed publications, including 5 first-author papers, h-index: 9; presentations at international conferences.
- Research focus: surface-functionalised porous silicon nanoparticles for targeted drug delivery and osteosarcoma research.