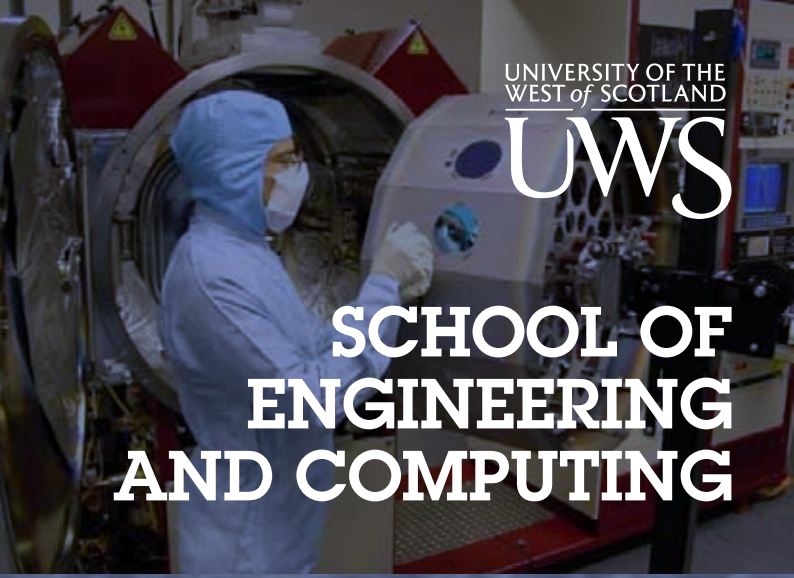


UNIVERSITY OF THE WEST of SCOTLAND

UWS

SCHOOL OF ENGINEERING AND COMPUTING

A GUIDE TO OUR

MSc ADVANCED THIN FILM TECHNOLOGIES

www.uws.ac.uk

Entry

It is expected that students will enter this programme having already completed an engineering or science based degree such as physics, chemistry, electronics or related technology.

The entry requirement is a first or upper second-class Honours degree from a university (or equivalent) in science, engineering, technology or a related discipline.

Candidates with lesser qualifications, such as an Ordinary degree in science or engineering, who also possess appropriate professional or industrial experience, may also be eligible for entry to the Postgraduate Diploma.

The requirement for such candidates is possession of at least two years' industrial experience. On successful completion of the Postgraduate Diploma, students would then be invited to join the MSc programme.

Duration based on specific requirements

To obtain the MSc, full-time students will normally take nine months to gain the Postgraduate Diploma and then an additional three months of study to gain the MSc from the date of commencement of the project.

Duration/Mode of Study

Campus Paisley, distance learning
Duration MSc (full-time/part-time) 1 year/2 years
Diploma (full-time/part-time) 9 months/18 months
Intake September

This programme is ideal for engineering or science graduates planning a career in research, development, production and/or business involving thin film technologies and continuing personal development of current industry professionals.

About the programme

Thin film technologies are key enablers in a wide range of global research, development, manufacturing, industrial and high technology applications and products. This unique programme has appeal for a global audience, both for continuing professional development and for those planning a career in thin film technologies, related products and applications.

The programme provides up-to-date coverage of evolving thin film technologies and latest developments in the field. This programme develops the multi-disciplinary skills needed for professional development within this rapidly expanding field and forms the basis for future professional chartered engineer and/or physicist status.

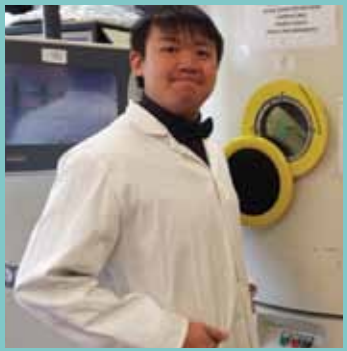
Programme delivery is provided by staff within the University's Institute of Thin Films, Sensors and Imaging, many of whom are internationally recognised researchers in thin film technologies and applications. The programme delivery also includes input from an industrial advisory group thus ensuring that the programme content is aligned with industrial requirements, applications and includes the latest technological developments.

Course experimental work is supported by extensive thin film deposition equipment which includes sputtering (DC & pulsed DC, RF, microwave, closed filed magnetron), chemical vapour deposition (RF plasma enhanced and hollow cathode chemical vapour deposition), electron beam deposition with plasma source assist, thermal evaporation, hydrothermal and wet chemistry deposition. Metrology supporting thin film characterisation includes scanning electron microscopy, electron dispersive X-ray, X-ray diffraction, ellipsometry, fixed & variable angle spectrophotometry, Raman microscopy, FTIR spectrophotometry, atomic force microscopy, four point probe for electrical testing and nano-indenter for measurement of film mechanical properties. Extensive thin film modelling capability is available: Macleod, TFCalc, FILMSTAR, Zemax, SOLIDWORKS, SCOUT.

Your learning

Core topics include thin film materials science, metrology and characterisation, theoretical modelling, physical and chemical-based thin film deposition methods including deposition system engineering and control, plasma processing, thin film devices and applications and research and project management. The programme content reflects the multidisciplinary nature of advanced thin film technologies and provides students with the necessary broad skill set. MSc students undertake experimental project work, providing practical skills in thin film deposition, characterisation and modelling, utilising the extensive range of equipment within the Institute of Thin Films, Sensors & Imaging.

Students are required to complete a dissertation, selecting a specialism in order to achieve a greater understanding of the implementation and advanced application of thin films. There may be scope to integrate this dissertation with industry, where an engineering supervisor will be allocated to assist your MSc journey and to advise and introduce you to industrial contacts.



Our Careers Advisor says

Graduates are equipped for a career in research, development, manufacturing and/or business, with global opportunities for employment. Most organisations that implement thin film based technologies employ fully trained, qualified technologists, consultants and technical marketing specialists throughout their lifecycle, with a consequent high global demand for such personnel across a wide range of applications, products and markets.

The programme taught modules have an element of professional development planning embedded within their content, enabling skills development beneficial to future employability.

Hands-on experience changing a sputter magnetron

Professional Recognition

This is a new programme registered with the Institute of Physics (IoP). Full accreditation for CEng and CPhys will be sought retrospectively in accordance with IoP and Institute of Engineering & Technology guidelines.

Contact

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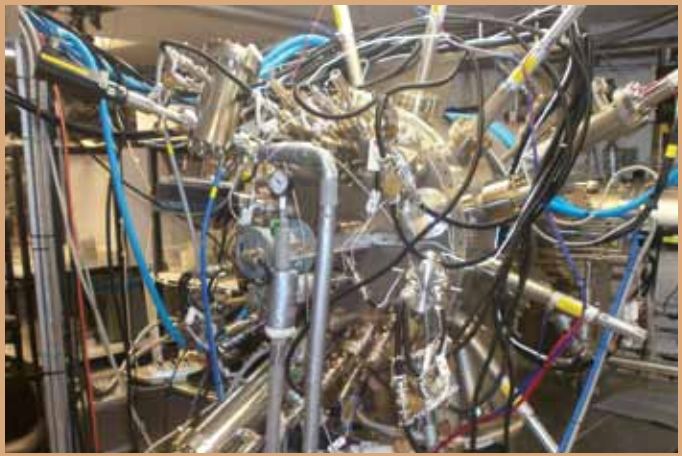
Email **ask@uws.ac.uk**



Molecular Beam Epitaxy deposition system

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