

Thin Film Coatings

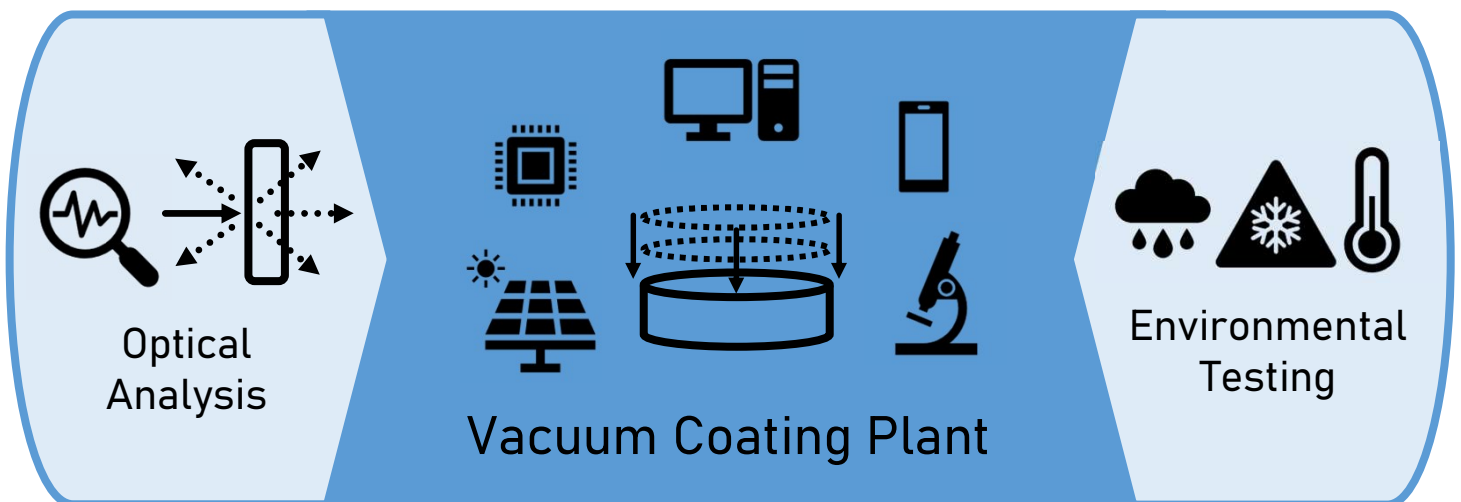
Thin film coatings are precisely synthesised layered films of nanometre thickness. Advances in thin film processing have revolutionised the world of technology around us such as, microelectronics, lighting, displays, photovoltaics and telecommunications.

CPE's £1.2M research and development thin film coating facility is the first of its kind in Wales and allows companies within the West Wales and the Valleys region to develop thin film technology products and applications. CPE's team of thin film specialists work closely with these companies supporting prototype development as well as production scale commercial R&D developing thin film vacuum deposition processes and products.

The **CPE Thin Film Coating Facility** is situated at Wrexham-Glyndwr University's OpTIC Centre in St Asaph. It features an industry benchmark vacuum coating plant along with key supporting equipment for optical analysis and environmental testing.



CPE Thin Film Coating Facility



Vacuum Coating Plant

Bühler SyrusPro 1350

For R&D production of high density thin films for prototyping and mass production.

- Chamber width of 1350 mm
- Two electron beam deposition sources
- One thermal evaporator
- Plasma Ion Assisted Deposition (PIAD) RF plasma source to improve the density and quality of thin films
- Capable of optical coatings for deep UV to far infrared wavelengths
- Integrated optical monitoring system

Thin Film Applications

Thin film technology impacts all major sectors including:

Aerospace & Automotive	Solar & Photovoltaics	Defence & Security
Electronics & Optoelectronics	Scientific & Medical	Agriculture & Environmental

Specific applications include:

- Camera lenses and systems
- Optoelectronics and microlithography
- Photovoltaics, sensors and filters
- Laser and mirror coatings
- Microscopes and telescopes

Spectrophotometer

Agilent Cary 7000

Measures transmission, reflection and absorption from ultraviolet to near-infrared wavelengths across a wide angle range.

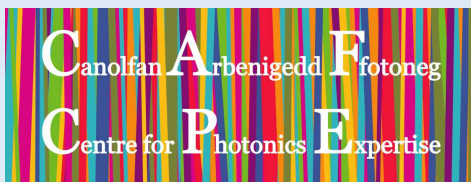
- Measurable wavelength range 175-3300 nm
- Multi-angle specular reflectance and transmittance
- Direct transmission, reflection, and absorbance

Environmental Chamber

James Technical Services

Temperature and humidity testing chamber for performance and lifetime testing.

- Temperatures from -70°C to 150°C
- Relative humidity from 0 to 98%
- Internal Size: 600 x 600 x 600 mm³
- Fast temperature cycling
- Three access ports
- Testing to ISO and MIL standards



University of South Wales
Prifysgol De Cymru

Contact our Business Development Team to find out more.

North Wales:

Carole Eccles

carole.eccles@glyndwr.ac.uk

01745 535232

**South Wales:**

Hazel Hung

hazel.hung@southwales.ac.uk

07552 249972



Haenau Ffilm Tenau

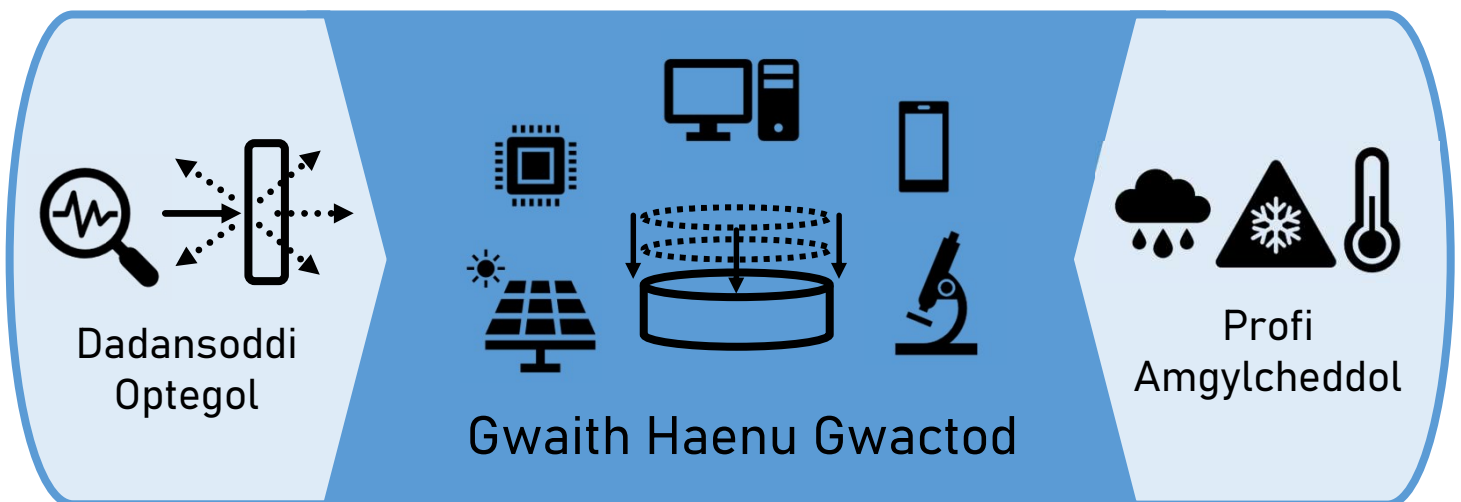
Mae haenau ffilm tenau yn ffilmiau haenog o drwch nanomedr wedi'u syntheseiddio'n fanwl gywir. Mae datblygiadau mewn prosesu ffilmiau tenau wedi chwyldroi byd technoleg o'n cwmpas megis, microelectroneg, goleuadau, arddangosfeydd, ffotofoltäig a thelathrebu.

Cyfleuster ymchwil a datblygu haenau ffilm tenau gwerth £1.2M CAFF yw'r cyntaf o'i fath yng Nghymru ac mae'n galluogi cwmnïau o fewn rhanbarth gorllewin Cymru a'r Cymoedd i ddatblygu cynhyrchion technoleg a chymwysïadau ffilm denau. Mae tîm CAFF o arbenigwyr ffilm denau yn gweithio'n agos gyda'r cwmnïau hyn gan gefnogi datblygiad prototeip yn ogystal ag Ymchwil a Datblygu masnachol ar raddfa gynhyrchu gan ddatblygu prosesau a chynhyrchion dyddodi gwactod ffilm denau.

Mae **Cyfleuster Haenau Ffilm Tenau CAFF** wedi'i leoli yng Nghanolfan OpTIC Prifysgol Glyndŵr Wrecsam yn Llanelwy. Mae'n cynnwys gwaith haenu gwactod safon diwydiant ynghyd ag offer ategol allweddol ar gyfer dadansoddi optegol a phroffion amgylcheddol.



Cyfleuster Haenau Ffilm Denau CAFF



Gwaith Haenu Gwactod

Bühler SyrusPro 1350

Ar gyfer cynhyrchu Ymchwil a Datblygu ffilmiau tenau dwysedd uchel ar gyfer prototeipio a masgynhyrchu.

- Lled siambr o 1350 mm
- Dwy ffynhonnell dyddodi pelydr electronau
- Un anweddydd thermol
- Ffynhonnell plasma RF dyddodiad â Chymorth ion Plasma (PIAD) i wella dwysedd ac ansawdd ffilmiau tenau
- Yn gallu gorchuddio haenau optegol ar gyfer tonfeddi UV dwfn i is-goch pell
- System fonitro optegol integredig

Sbectroffotomedr

Agilent Cary 7000

Mae'n mesur trosglwyddiad, adlewyrchiad ac amsugniad o donfeddi uwchfioled i donfeddi sydd bron yn is-goch ar draws ystod ongl lydan.

- Amrediad tonfedd mesuradwy 175-3300 nm
- Adlewyrchiad a thrawsyrrianedd adlewyrchol aml-ongl
- Trosglwyddiad uniongyrchol, adlewyrchiad ac amsugnedd

Cymwysiadau Ffilm Denau

Mae technoleg ffilm denau yn effeithio ar bob prif sector gan gynnwys:

Awyrofod a Modurol	Solar a Ffotofoltäig	Amddiffyn a Diogelwch
Electroneg ac Optoelectroneg	Gwyddonol a Meddygol	Amaethyddiaeth a'r Amgylchedd

Mae defnyddiau penodol yn cynnwys:

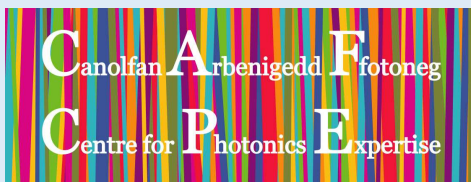
- Lensys a systemau camera
- Optoelectroneg a microlithograffeg
- Ffotofoltäig, synwryddion a hidlwyr
- Haenau laser a drych
- Microsgopau a thelesgopau

Siambr Amgylcheddol

James Technical Services

Siambr profi tymheredd a lleithder ar gyfer profi perfformiad a oes.

- Tymheredd rhwng -70°C a 150°C
- Lleithder cymharol rhwng 0% a 98%.
- Maint mewnol 600 x 600 x 600 mm3
- Cylchu tymheredd cyflym
- Tri phorth mynediad
- Profi i safonau ISO a MIL



Cysylltwch â'n Tîm Datblygu Busnes i gael gwybod mwy.

Gogledd Cymru:

Carole Eccles
carole.eccles@glyndwr.ac.uk
 01745 535232

**De Cymru:**

Hazel Hung
hazel.hung@southwales.ac.uk
 07552 249972

