



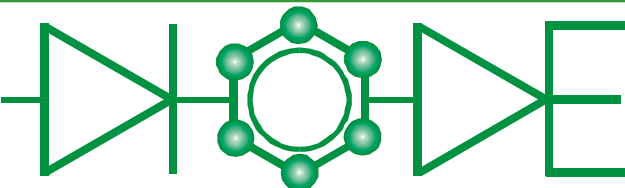
Prifysgol Cymru
Aberystwyth
The University of Wales

Department of Physics

- Abel Brieva.
- Spanish
- Pre-doc undertaking PhD studies
- Ellipsometric in-situ probes



IHP Research Training Network



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Aberystwyth*



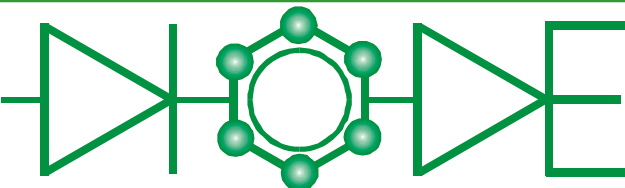
Department of Physics

Background

- Born in Asturias. Spain.
- Physics Degree 1992. University of Salamanca
- 2 years of specialization in Electronics
- Working outside Science 1992-2001



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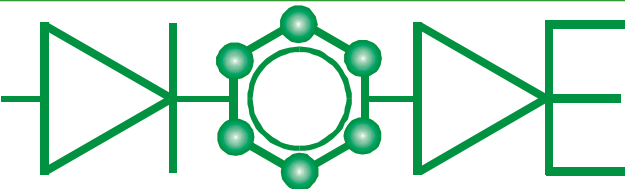
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Undertaking a PhD

- Only 9 months ago I have been given the opportunity of coming back to Science.
- PhD Student with the DIODE project.



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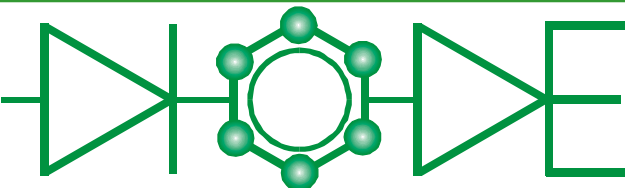
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Undertaking a PhD

- PhD with the subject “Ellipsometric studies of materials”
- First goal: In-situ monitoring of organics growth.
- Now I am installing the ellipsometer on the chamber and starting the calibration of the probe.

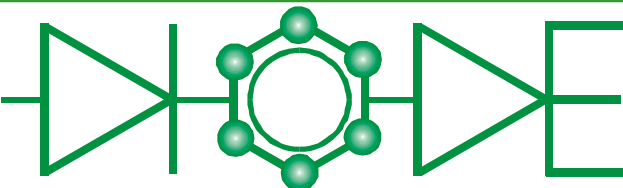
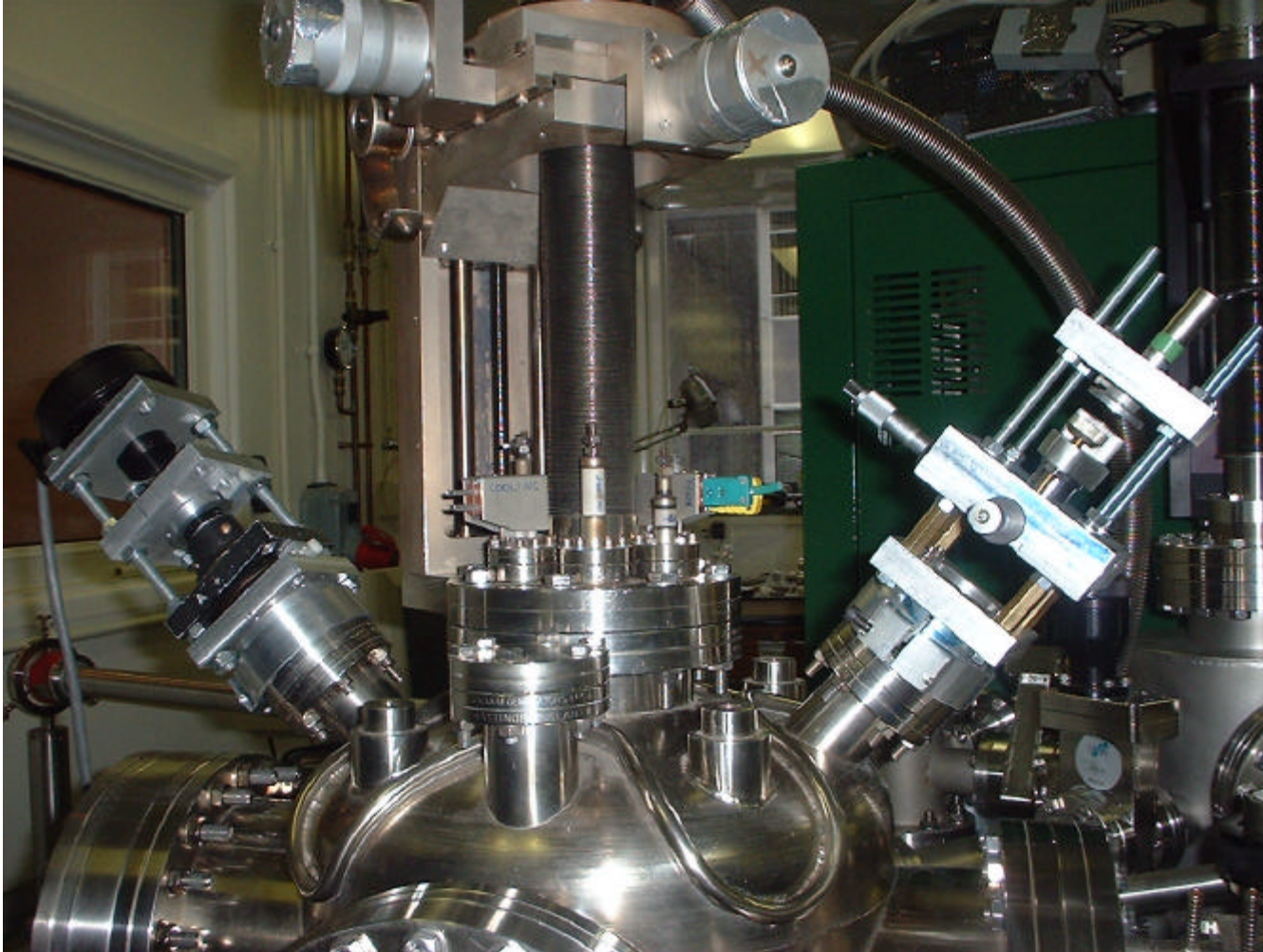


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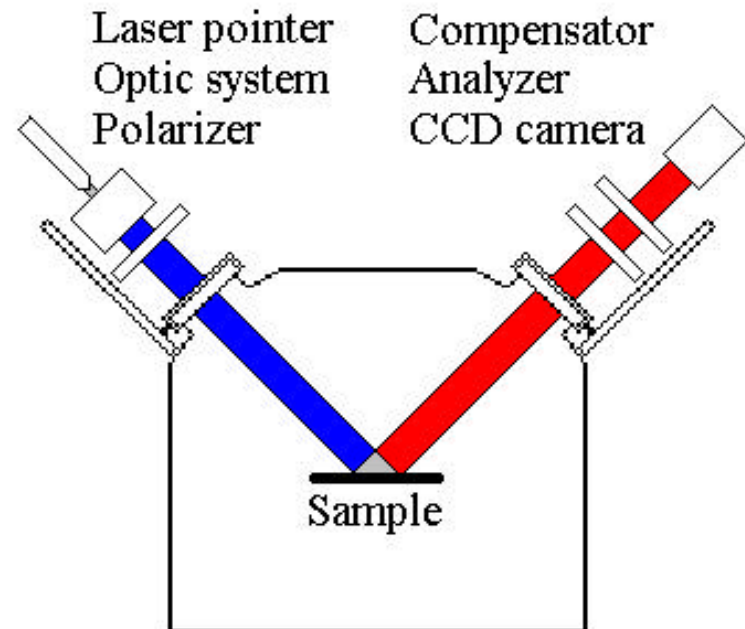
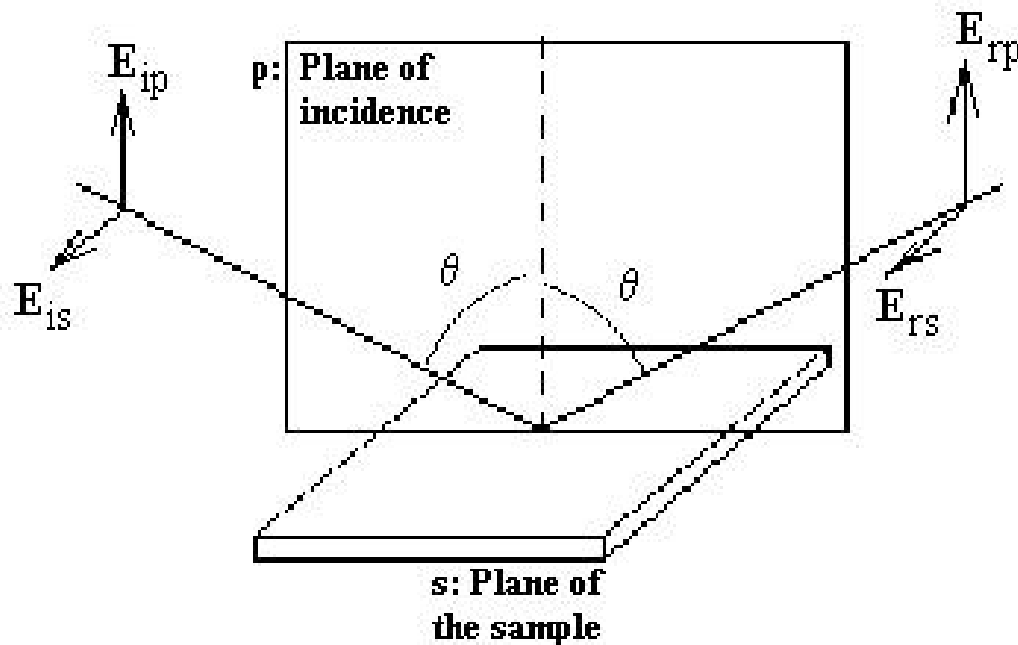
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In-situ ellipsometry



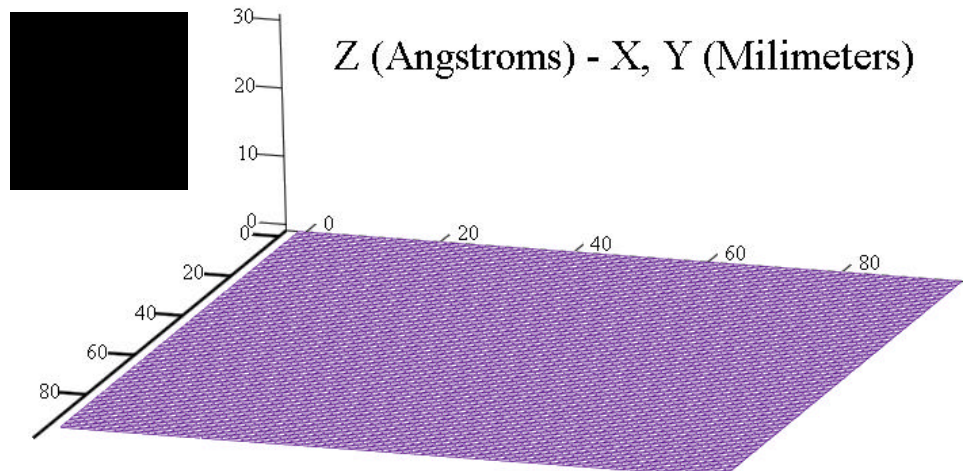
In-situ Ellipsometry

- Ellipsometry is the measure of the changes in the polarization state of the light.

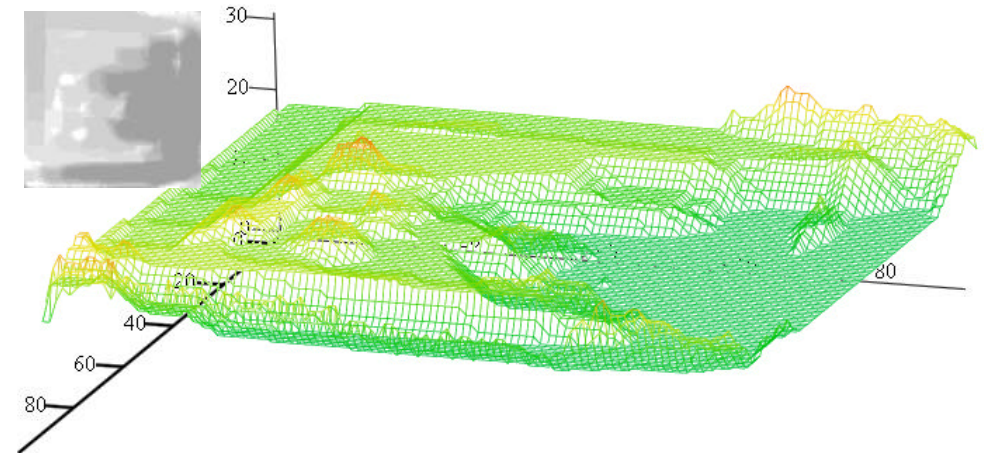
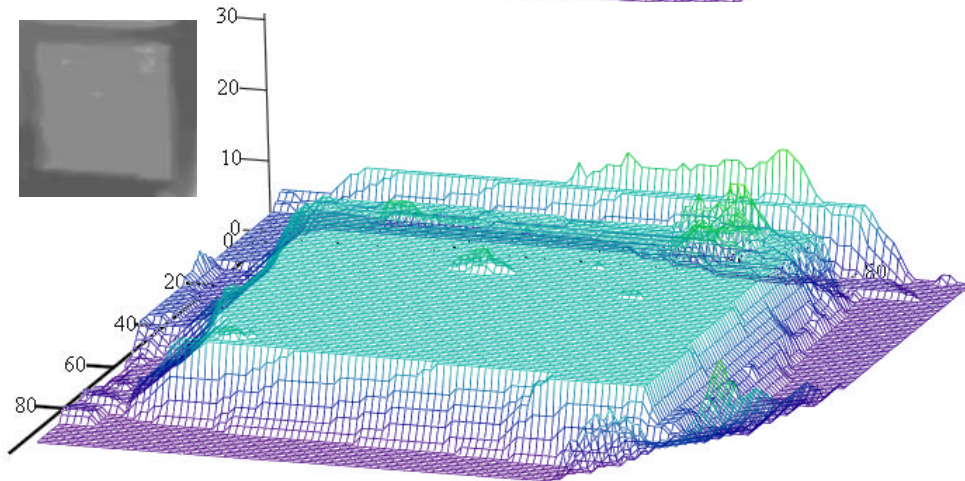


Off-null Ellipsometry

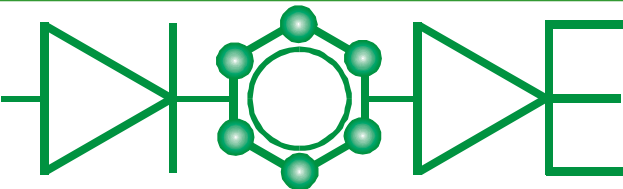
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$$Z = k * "I$$



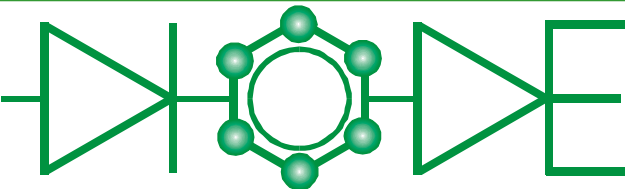
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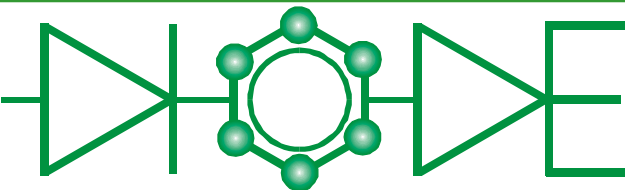
Ellipsometry

- Resolution of 1\AA in thickness and $3\mu\text{m}$ lateral had been reported with ellipsometry.
- It is not an invasive or destructive technique.
- Can be used for monitoring any organic film growth.

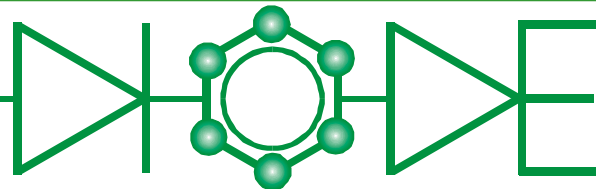
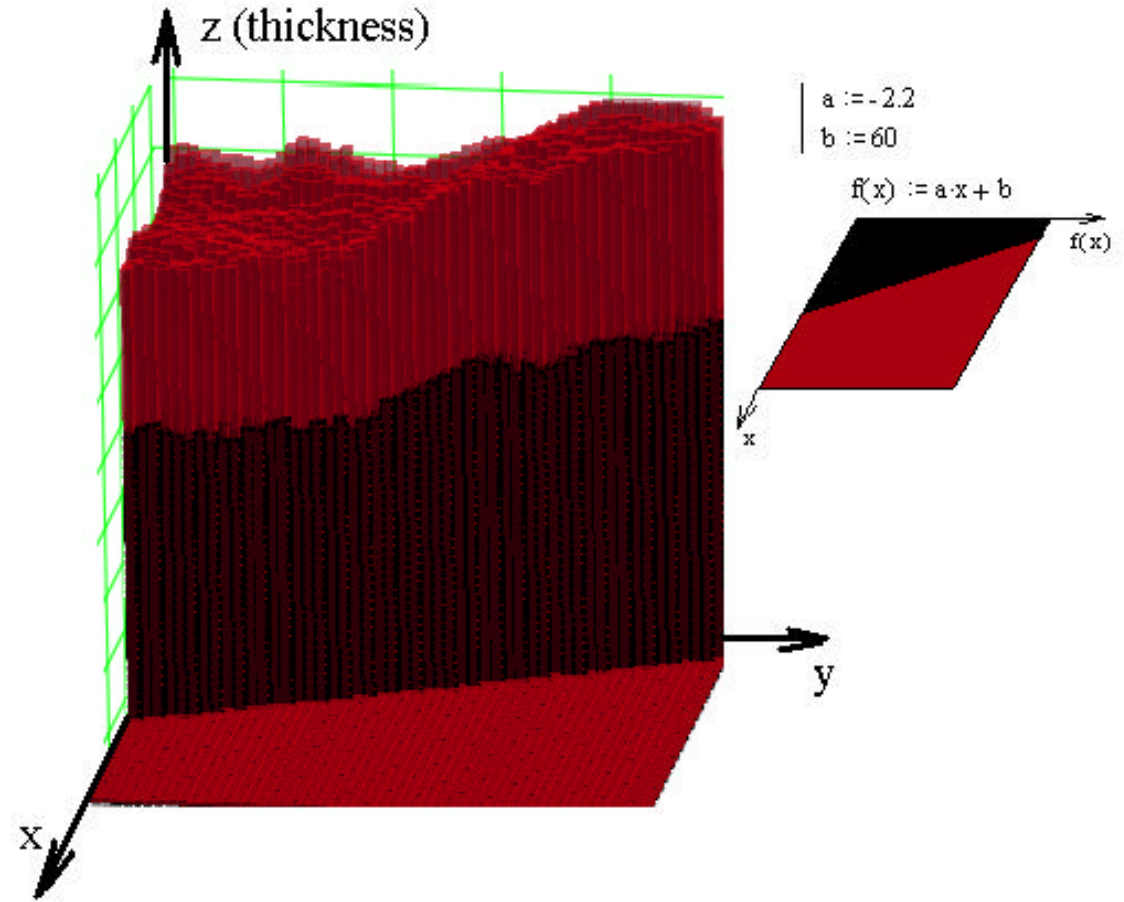
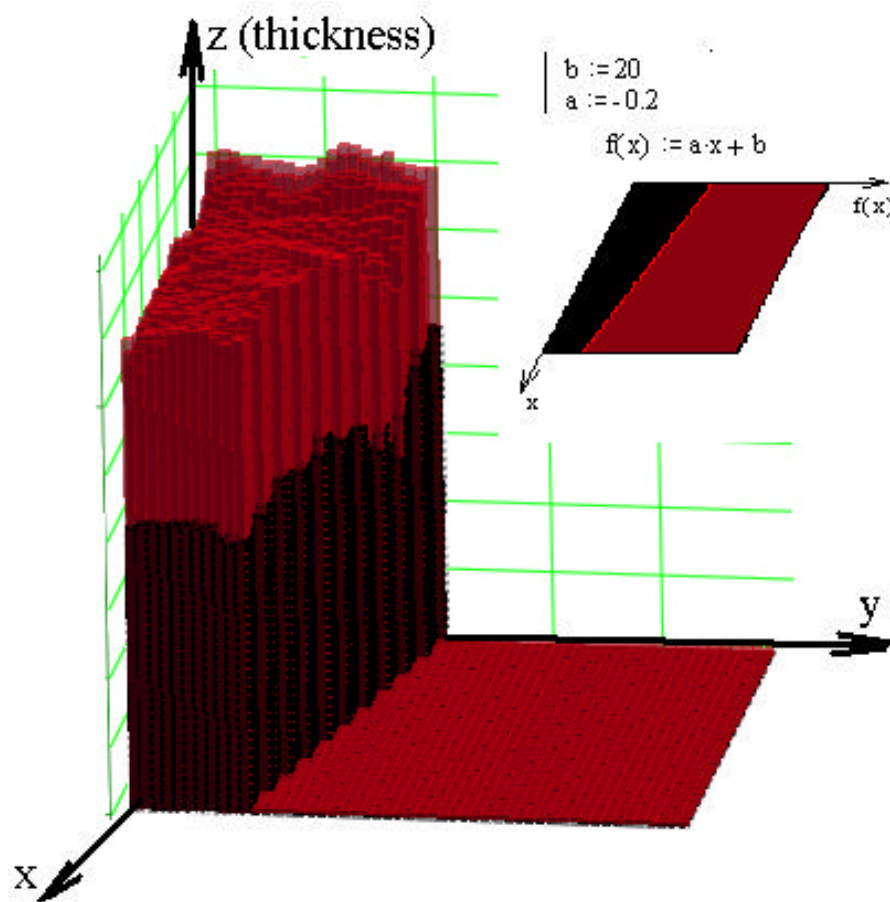


Applications

- Optimisation of the growth of organic multilayer structures.
- Quality control during device fabrication.

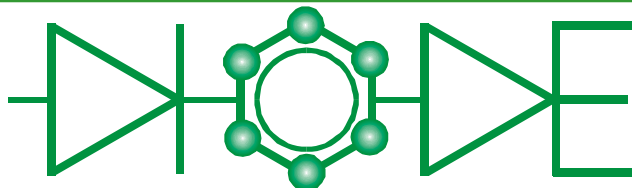


Multilayer growth



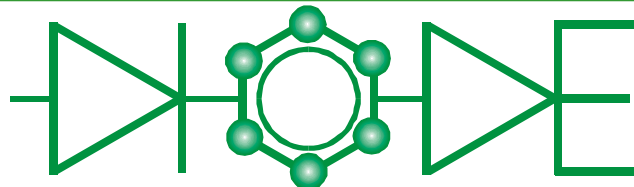
DIODE Network-1

- What can my work in the DIODE be useful for?
- Off-null ellipsometry can be used complementarily to any other in-situ or real-time monitoring technique.



DIODE Network-2

- The ellipsometer is portable throughout the laboratories in the network.
- Ellipsometric techniques are used TU-Chemnitz as well.



Training

- I have found a friendly and helpful environment in my group.
- During these first months I have been improving the experimental set-up.
- Training research course in Gregynog
- DIODE training program.

