

ICGEE Curriculum available for 2011/2012 Academic Year

Compound Semiconductor Device Fabrication

Module Title:	Compound Semiconductor Device Fabrication
Module Status:	Available in 2011/2012 academic year, starting from October 2011

Generic Module Information:

Name of module owner/lecturer?	Module Coordinators: Brendan O'Neill & Brian Corbett Lecturer: Carmel Kelleher
Delivery mode: e.g. on-site, on-line, mixed-mode. For on-site specify contact hours per week	Block delivery mode: 5 full days from 10.00 to 17.00 with breaks for lunch (from 13.00 to 14.00) and 2 breaks for tea-coffee (30 minutes in total). Tentative dates:
Duration of the module:	Five days on-site plus advance preparation & post visit report writing
Assessment methods and weightings where relevant:	50% for the activity demonstrated during the experimental session and 50% for the written report and answering questions.
Pass standard:	Demonstration good activities during the demonstration section and experimental work and if mark for the report is exceeded 40%.
Penalties for late submission of continuous assessment work:	Penalties for late submission of continuous assessment work: reduction of the overall mark
Number of ECTs or institutional credits assigned to the module:	5 ECTs
Course Content or Syllabus:	<ul style="list-style-type: none"> ● Processing techniques: The following techniques will be examined in some detail: photolithography, etching, metal deposition, thermal treatments and measurement. ● Devices/Circuits: Techniques for fabrication of the compound semiconductor devices, mainly light emitting devices such as solid state lasers, LEDs etc. ● Device testing and relationship between device characteristics and process parameters. ● Silicon processing will be covered by highlighting some of the differences between III-V processing and silicon processing. Technologies such as thermal oxidation and ion implantation will be covered in this section.
Learning Outcomes	On successful completion of this module the learner will be able to: <ul style="list-style-type: none"> ● fabricate a simple light emitting device and understand the technology involved
Recommended Text	S.M. Sze, Semiconductor Devices; Physics and Technology, John Willey & Sons, Inc., USA, 2002 (or any later edition) J.D. Plummer, M.D. Deal, and P. B. Griffin, Silicon VLSI Technology, Prentice Hall, NY, 2000 (or any later edition). Any good III-V basic technology text book
Supplementary Texts	Hand outs and Power Point Presentation will be provided at the site.
Other relevant information	