

## Laser Technology and Applications

### Who should attend this course?

This course is aimed at engineers and managers who are responsible for process development or research using lasers. A background in physics or engineering is helpful for understanding the technical content of this course.

### Why should you attend this course?

Lasers have many advantages over other materials-processing and machining techniques. This course gives a detailed overview of the different types of laser and their capabilities for different applications and different materials. As well as providing comprehensive background information, it gives an opportunity to see different lasers in action and get some hands-on experience in our laboratories, and to discuss your ideas on the best use of lasers in your industry.

### Programme

#### Day 1 – Light and Lasers

- Properties of light
- Laser theory
- Types of laser
- Laser safety

#### Day 2 – Beam Engineering and Laser/Material Interaction

- Laser beam properties
- Optics for beam delivery
- Beam characterisation
- Photo-chemical, photo-thermal and photo-mechanical reactions in different materials

#### Day 3 – Lasers in manufacturing

- Cutting, drilling and marking
- Welding
- Deposition and particle generation
- Surface modification

#### Days 1, 2 and 3 – Practical sessions

Parallel laboratory sessions with a maximum of 3 trainees in each session. Exact content depends on attendance profile. For example:

- Marking and welding using a CO<sub>2</sub> laser
- Channel etching using an excimer laser
- Beam profiling on a UV DPSS laser

### Booking Information

The next course runs from Tuesday 19<sup>th</sup> to Thursday 21<sup>st</sup> May 2009. Places can be booked through BESTNET at 061 371753 or [bestnet@icbe.ie](mailto:bestnet@icbe.ie) for €540 per person. Course notes, refreshments and lunch are included in the course fee. Attendance is restricted to a total of 9 trainees in order to have a maximum of 3 in each practical session and ensure a good learning experience.

### Location

This course is held at the NCLA, which is located in the Physics Department at the National University of Ireland, Galway.

For more information contact [ncla@nuigalway.ie](mailto:ncla@nuigalway.ie).