

Ewa Goldys

Position Professor

Organisation Dept of Physics, Macquarie University

Scientific specialisation

- Optical physics and biophotonics (using light in biological systems)

Areas of expertise

- optical detection
- optical characterisation especially of trace impurities and defects in materials
- synthesis of nanostructures,
- advanced microscopy (electron and laser scanning), cathodoluminescence
- selected aspects of biophotonics

Capabilities:

- optical technology customisation
- technology and method development
- develop and manage research programs
- research team development
- research grant preparation
- capability and needs assessment in fluorescence and selected optical technologies
- expert witness for selected technology validation

Field of application

- industrial fungi
- yeast
- thin solid films such as optical coatings, semiconductor materials
- fluorescent nanoparticles

Facilities

- Advanced laser scanning microscopy with time-resolved and multiphoton capabilities
Instrument can be used to make images of cells where parts of cells are clearly visible and follow selected biochemical processes in cells. Probes microscopic size areas.
- Multifunctional Fluorolog 3 Fluorimeter
Instrument makes all sorts of fluorescence measurements on macroscopic samples, preferably solutions. Probes macroscopic samples and volumes.

Instruments offer extreme sensitivity because only fluorescent molecules are observed and others are not showing.

Facility availability

- Instruments forms part of a service facility available for collaborative and contact work.

Track record of industrial partnerships

- consultancies for Polartech, JY Horiba.
- current project with Pharm Ltd.

Publication track record

12 papers in theoretical physics, 25 papers in semiconductor growth technologies, 40 papers in advanced electron microscopy.