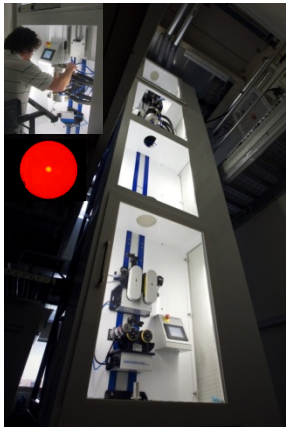
Photonics & Optical Communications @ EE&T – UNSW

光子学与光通信

POF fabrication

Silica fibre -MCVD

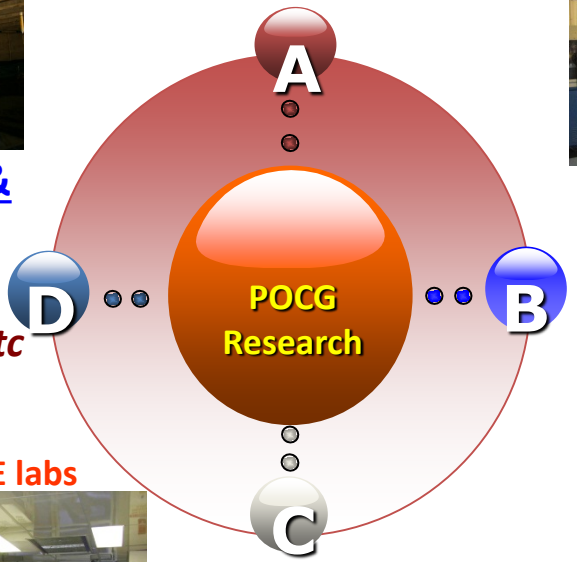


SHM for RailCorp

SHM for RTA

Silica & Polymer Optical Fibres

application-specific fibres



Optical Fibre Sensors & Systems

hydrophone, strain, humidity, temperature, etc

Photonic Fibre Devices

fibre lasers, amplifiers, gratings,

POF grating

Silica grating

HC-PECVD / RIE labs

Photonic Planar Devices

PLCs, gratings, filters

Photonics & Optical Communications

University of New South Wales

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Capabilities & Facilities

Silica optical fibre fabrication --- MCVD
Polymer optical fibre fabrication --- PMMA
Optical waveguide fabrication --- PECVD
Photonic device fabrication --- MOPO laser -- POF
FBG & Fibre laser fabrication --- Ar laser -- Silica fibre
Fibre sensors --- hydrophone, strain, temperature, gas,

科研能力及设施

石英光纤制造 – MCVD
聚合物光纤制备 – 聚合物光纤
光波导制备 – PECVD
光纤光栅制备 – MOPO激光 – POF
光纤光栅及光纤激光
光纤传感器

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Research areas

- ***Specialty optical fibres***
  - ✓ ***Photosensitive silica and polymer fibres***
  - ✓ ***Active & nonlinear optical fibres***
- ***Photonic devices***
  - ✓ ***Fibre Lasers, Gratings, Amplifiers***
  - ✓ ***Optical Modulators and Switches***
- ***Waveguide Technologies***
  - ✓ ***Passive and active photonic components***
  - ✓ ***Optoeleconic interconnection***
- ***Optical measurement, fibre sensors and signal processing technologies***
  - ✓ ***Optical measurement***
  - ✓ ***Optical fibre hydrophone***
  - ✓ ***Strain and gas sensor***

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Research 科研

- ***Specialty optical fibres*** 特种光纤
  - ✓ ***Photosensitive silica and polymer fibres*** 光敏石英光纤和光敏聚合物光纤
  - ✓ ***Active & nonlinear optical fibres*** 有源光纤与非线性光纤
- ***Photonic devices*** 光子器件
  - ✓ ***Fibre Lasers, Gratings, Amplifiers*** 光纤激光器，光栅，放大器
  - ✓ ***Optical Modulators and Switches*** 光调制器和开关
- ***Waveguide Technologies*** 波导技术
  - ✓ ***Passive and active photonic components*** 无源和有源光波导器件
- ***Fibre sensors*** 光纤测量传感

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Current International Collaborations

High Temperature Sensor – Xi'an Jiao Tong University, International Joint Lab, China

Polymer optical Sensing – 8 EU institutions (EU program: TRIPOD), EU

EU & ANZ research collaboration – 5 EU + 3 ANZ Universities (EU program: PANTHER), EU

Ultra broadband Bi/Er fibres – Shanghai University, NNSF Key International Project, China

Optical Fibre Seismic Sensing – Shandong Academy of Sciences, SINOPEC, China

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当前主要合作项目 Current Collaborations

高温传感器 - 西安交通大学，国际合作联合实验室

聚合物光纤传感 - 欧盟项目- TRIPOD

欧盟和澳新研究合作 - 欧盟项目- PANTHER

超宽谱铋铒镱共掺石英光纤研究 – 上海大学:国家自然科学基金国际合作重点研究项目

光纤地震采集技术 – 山东科学院,中电23所,中石化地球物理勘探公司