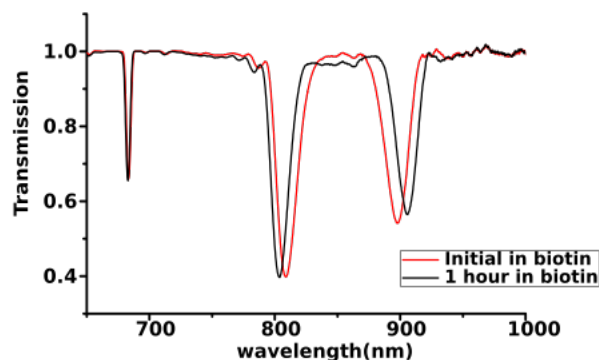
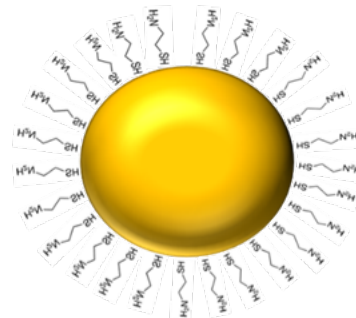
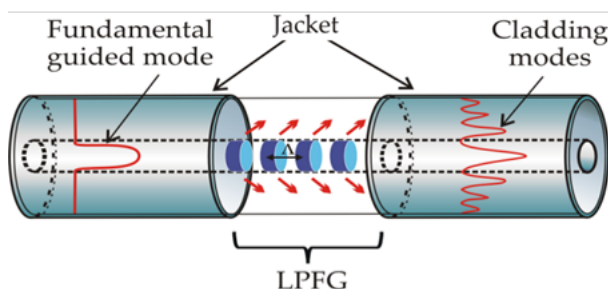




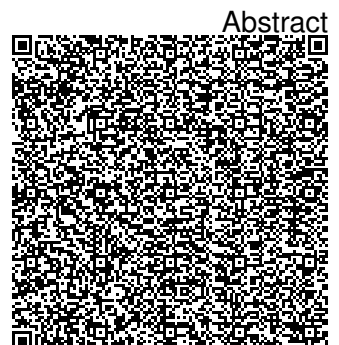
Optics and Photonics Group Lunchtime Seminar “Modified Long Period Fibre gratings for biomolecule detection”

LiangLiang Liu



12:00pm Thursday 8th December 2016
Lecture Theatre 203 Tower Building
All Welcome

http://optics.nottingham.ac.uk/wiki/Talks_2016



Abstract

“Modified Long Period Fibre gratings for biomolecule detection”

LiangLiang Liu

12:00pm Thursday 8th December 2016

Lecture Theatre 203 Tower Building

All Welcome

A Long period fibre grating couples light from fundamental core mode into cladding modes by inscribing a periodical gratings inside of fibre core. The coupling of cladding modes are wavelength dependent that leads to a spectrally selective loss. Any perturbation of surrounding refractive index, temperature or applied strain will essentially alter the resonance condition resulting in the wavelength shift or amplitude change in response to the relevant change.

A LPG can be modified with spherical silica nanoparticles in order to raise the RI sensitivity and create a big surface to volume ratio for the interaction of biomolecules. The interaction of biomolecules with the bio-receptors mounted on the coated LPG basically change the refractive index around LPG and this change is captured by the LPG and translated into optical signal change. Thanks to the higher sensitivity, the interaction of biomolecules with bio-receptors can be dynamically monitored with the developed sensor.