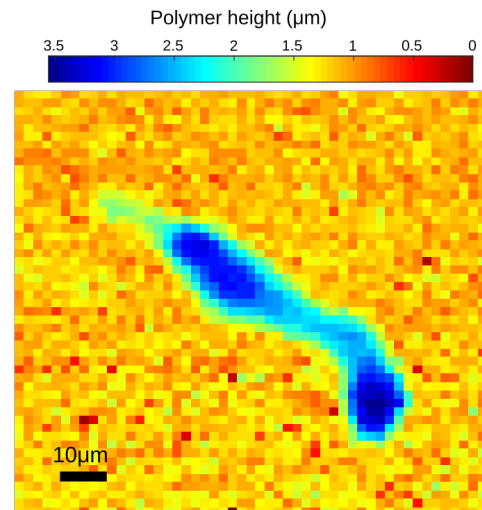
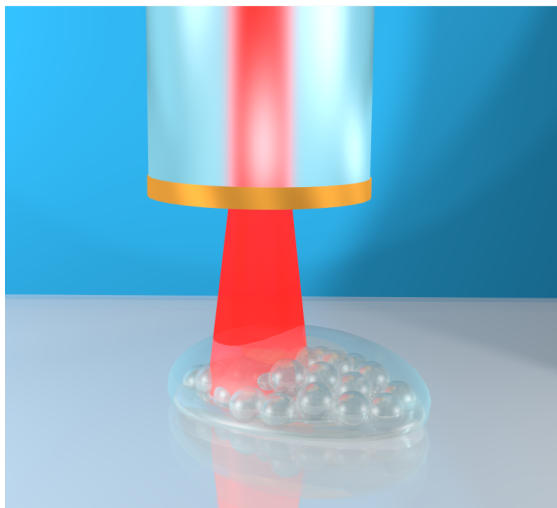


Optics and Photonics Group
Lunchtime Seminar

**“Sub-micron axial resolution
ultrasound imaging with a
single optical fibre”**

Salvatore LaCavera III



13:00 Wednesday 12 February 2020
203 Tower Building
All Welcome

http://optics.nottingham.ac.uk/wiki/Talks_2020



“Sub-micron axial resolution ultrasound imaging with a single optical fibre”

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Ultrasonic transducers which resonate in the GHz frequency range are capable of exciting sub-micron features of small objects such as biological cells, nano-structures, and semiconductors. When such transducers are paired with a time-resolved detection system, the acoustic signals can be used to construct 3D models of a sample's elastic and spatial properties with sub-optical axial resolution and acoustic contrast. Currently, large optical systems are required to make such time-resolved GHz-regime measurements. In order to expand the utility and applicability of these high frequency laser ultrasonic techniques, the entire optical system and the transducer should be re-engineered to be compact, mobile, and flexible. One potential solution is to utilise a single optical fibre to facilitate the output of the optical system and simultaneously act as the transducer. In this talk I will present the development of these fibre-transducers, and proof of concept results in both sensing and imaging.