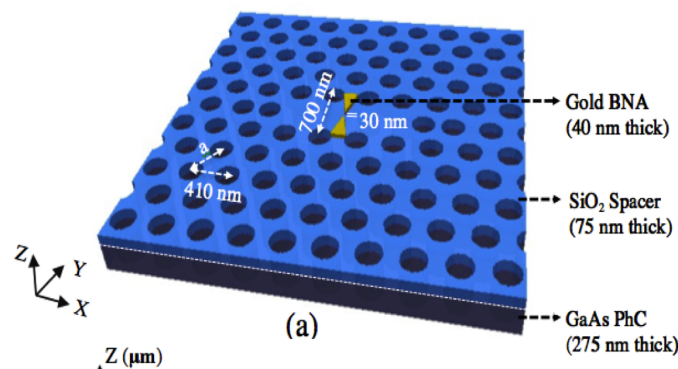




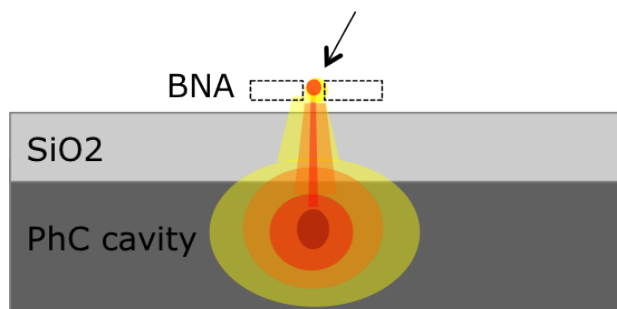
# Optics and Photonics Group Lunchtime Seminar

## “A hybrid photonic-plasmonic cavity with high quality factor and confinement of light”

Mina Mossayebi



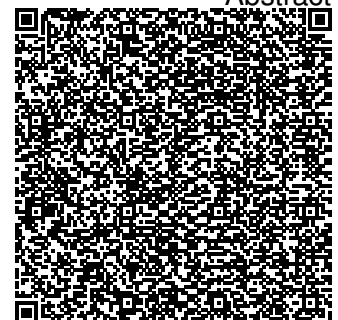
**Accessible region**



12:00pm Thursday 1st December 2016  
Lecture Theatre 203 Tower Building  
All Welcome

[http://optics.nottingham.ac.uk/wiki/Talks\\_2016](http://optics.nottingham.ac.uk/wiki/Talks_2016)

Abstract



# “A hybrid photonic-plasmonic cavity with high quality factor and confinement of light”

Mina Mossayebi

12:00pm Thursday 1st December 2016

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We detail the design and characteristics of a hybrid photonic-plasmonic nanoresonator comprising of a L3 photonic crystal cavity coupled to a gold bowtie nanoantenna with a silicon dioxide layer as a realistic spacer between the two. Using 3D finite-difference time-domain simulations, we show that this hybrid device can achieve a hot spot outside the PhC cavity with a small volume and high intensity enhancement, while maintaining a high quality factor. We also show ability of integrating this device with platforms such as photonic integrated circuits by integration of this hybrid device with a W1 PhC waveguide. Future applications include nanosensing, near field optical trapping and manipulation of nanoparticles, Raman spectroscopy, and quantum interfacing.