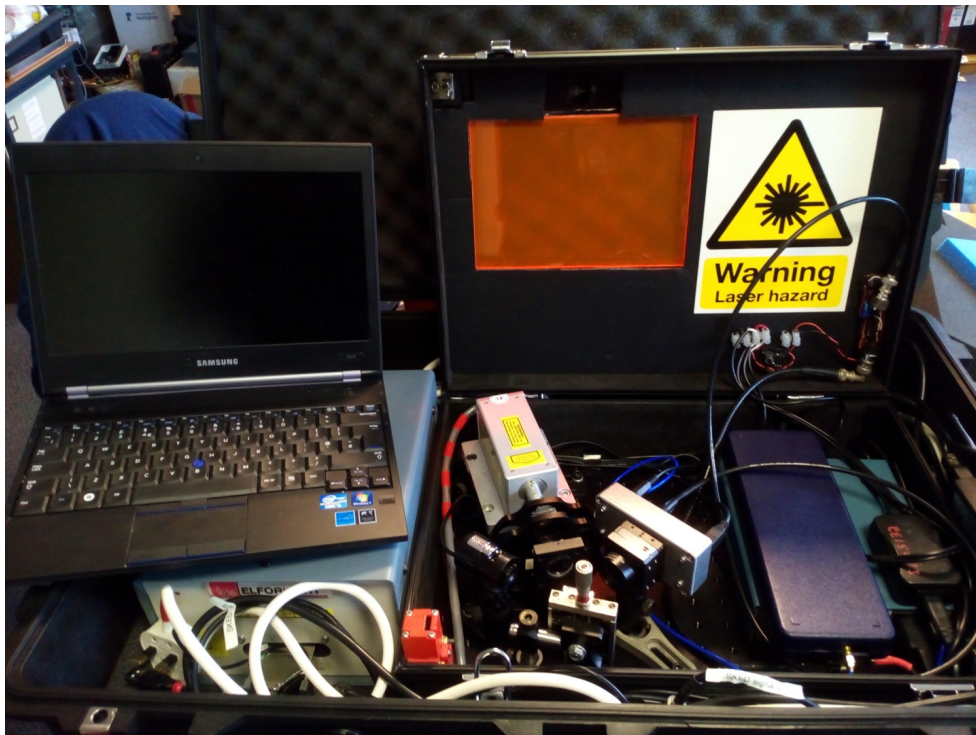


Optics and Photonics Group Lunchtime Seminar

“SKED-in-a-box: a simple and inexpensive laser ultrasound rough surface detector system”

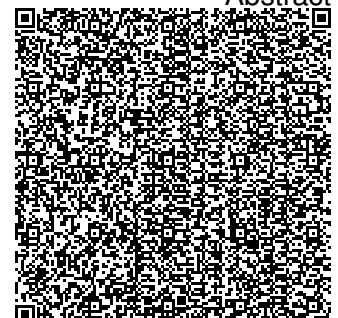
Rikesh Patel



1:00pm Thursday 16th November 2017
203 Tower Building
All Welcome

http://optics.nottingham.ac.uk/wiki/Talks_2017

Abstract



“SKED-in-a-box: a simple and inexpensive laser ultrasound rough surface detector system”

Rikesh Patel

1:00pm Thursday 16th November 2017

203 Tower Building

All Welcome

The advantages of using laser ultrasound (LU) to conduct non-destructive material evaluation includes the ability to perform non-contact testing and measure small features. However LU is not often used in an industrial environment due to some detection drawbacks. The detection system may not be robust enough under microphonics/vibration. Given the industrial context, it is difficult to detect ultrasonic signals on surfaces that give specular return (rough surfaces). Finally, commercial detector solutions are often too expensive and restrictive for the technique to be used outside niche scenarios. This presentation will explore the detector known as the speckle knife edge detector (SKED), which can potentially overcome all these drawbacks. The detector is able to measure an incident speckle field shift, i.e. measure ultrasound signals off rough surfaces. There are some key benefits in using the SKED, including the cost, speed and small form factor. A demonstration of a SKED experiment is planned.