

# SEMINAR



## **Speaker: Dr. Ammar A. Melaibari**

Assistant Professor  
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**Ammar Melaibari** received his BS degree in Mechanical engineering from King Abdulaziz University. Then, he worked in steel industry (ARCOMA) before applying for graduate study at Iowa State University where he received his MS and PhD degrees in Mechanical Engineering. He received the Iowa state research excellence award for fall 2014, spring 2015, and the honorable mention for the Zaffarano Prize in 2015. Dr. Ammar's primary research areas are material design and manufacturing with focus on laser processing and nanotechnology. Dr. Ammar has 15 scientific papers, including a US patent, in the fields of physics, material science and engineering.

**Date:** Monday, April 11, 2016

**Time:** 1:00 PM

**Venue:** Engineering Building, Second floor,  
Room 24C28 (ECE Seminar Room)

## **Title**

### **A Prospect of Laser in Saudi Arabia**

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## **Abstract**

Laser processes are emerging as a new important field that have the potential to improve variety of products and different industries. This seminar introduce laser and material interaction, and explore specific new developments in laser processes through three main subjects: laser machining, laser deposition of thin film, and laser treatment. In laser machining of ultra-hard material, controlled crack propagation mechanism -as opposed to the typical ablation mechanism- was investigated, and micromachining of ultra-hard thin film was also observed. For the laser deposition of ultra-hard thin film, designing new microstructured materials was explored, and the utilization of the inherent particulate formation associated with the pulsed laser deposition process was proposed for the first time. After that, a novel laser/waterjet treatment process to increase the hardness of certain ceramic materials was studied. Also, laser shock processing was investigated.

**ALL ARE CORDIALLY INVITED**