

# **MSE SEMINAR**

March 24, 2017  
113 McBryde Hall  
3:30 – 4:30 PM  
Refreshments at 3:00 PM

## ***Constantine Farah***

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Materials Science and Engineering, Virginia Tech**

## **“Introduction to the Fabrication and Applications of Optical Fibers”**

### **ABSTRACT**

Polymer Optical Fibers (POF) have existed since 1968 when DuPont first developed and commercialized a POF made from polymethyl methacrylate (PMMA). Since then there have been various manufacturing advancements allowing POF's use to expand into various industries. Today POF's can be found in Home and Automobile networks, and in various sensors including developments for medical use. Combining the use of Ultra Violet light, POF's have an expanded use as fiber Bragg gratings. With nano-particle doping manufacturing and sensor abilities are expanded into yet another roll as bio-chemical sensors and imaging tools. As other technical advancements are made the only limitation to POF's use will be the attenuation performance required and environmental conditions.

### **BIOSKETCH**

Constantine Farah is currently pursuing a Masters in Engineering degree in MSE, and working full-time at Hollingsworth and Vose Company (H&V) in Floyd, VA as a Process Engineer. Prior to joining H&V, Constantine served on active duty as a United States Naval Officer, and continues his service through reserve duty. He holds a Bachelor of Science in Mechanical Engineering from University of Southern California and a Bachelor of Arts in Physics and Liberal Education from Whittier College. Constantine is currently working in dry laid air and carbon impregnated molecular filtration media. He also supports the office of the Chief Engineer of Space and Naval Warfare Systems Command through research in nano-satellites systems and supporting program management review. His education and research interest includes nuclear engineering, optics, nano-particle applications, inkjet printing, polymer extrusion, and fiber spinning. Constantine has co-authored three publications in optics, and optical modulation of nano-particles. He has also played various rolls in the development of filtration media currently in use for BioPharm, Food and Beverage, Hydraulic, Fuel, Battery, and Air applications.