Contribution ID: **1459** Type: **Poster (Student, In Competition) / Affiche (Étudiant(e), inscrit à la compétition)**

Metal Colorization and its application: using picosecond pulses

Tuesday 14 June 2016 19:06 (2 minutes)

World mints compete year after year to produce new technologies that will revolutionize the field, increase revenue and make these new technologies unique and attractive to the Market place. New technologies developed in this project is to use nanoparticles and laser induced gratings to create fixed colors and holograms on metallic surfaces. The use of nanoparticles (NPs) as the colorizing agent dates back to the Roman Empire. When exposed to electro-magnetic radiations, NPs exhibit unique optical properties that depend on their shape, volume fraction, hosting medium and permittivity, a feature that has drawn considerable attention in fields such as sensing, jewel making and solar cells. We present the angle-independent coloring of silver and gold. The coloring of pure gold (from violet to red) is a world first. We also present the direct writing and transfer of holograms on silver, gold and steel for a new product line at the Royal Canadian Mint.

Author: Mr GUAY, Jean-Michel (University of Ottawa)

Co-author: Mr COTE, Guillaume (University of Ottawa)

Presenter: Mr COTE, Guillaume (University of Ottawa)

Session Classification: DIAP Poster Session with beer / Session d'affiches, avec bière DPIA

Track Classification: Industrial and Applied Physics / Physique industrielle et appliquée (DIAP-DPIA)