



Canadian Association  
of Physicists

Association canadienne  
des physiciens et physiciennes

Contribution ID: 2169

Type: Oral (Graduate Student) / Orale (Étudiant(e) du 2e ou 3e cycle)

## Optical investigation of low-dimensional purple and blue bronzes (G)

*Tuesday, 12 June 2018 14:00 (15 minutes)*

The molybdenum oxide bronzes are a family of low-dimensional materials exhibiting interesting behavior including superconductivity, charge-density wave states, and metal-insulator transitions. After considerable study, there is still no firm consensus regarding a theory to explain their unique features. We have synthesized single crystals of blue bronzes  $A_0.3MoO_3$  ( $A=K, Rb$ ) and purple bronzes  $A_0.9Mo_6O_{17}$  ( $A=Li, Na, K$ ) using a gradient flux technique and have investigated the optical properties of these materials along different crystallographic axes using optical reflectance spectroscopy. We have taken advantage of annealing the single crystals in various gas flows to analyze changes in their properties after annealing in hopes of contributing to the understanding of the mechanisms at play in these low-dimensional materials. Changes in their structural and magnetic properties upon annealing were investigated via X-ray diffraction and magnetization measurements and will also be reported.

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**Session Classification:** T3-2 Thin Films, Magnetism and Solar Cells (DCMMP) | Films minces, magnétisme et piles solaires (DPMCM)

**Track Classification:** Condensed Matter and Materials Physics / Physique de la matière condensée et matériaux (DCMMP-DPMCM)