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Correlation between optical and structural properties of single II-VI compound semiconductor nanowires ANKUR SAXENA, HARRY RUDA, University of Toronto — Semiconductor nanowires have recently found tremendous interest in research community due to their prospective applications in areas such as electronic devices, photo-voltaics, and biological and chemical sensing. Among them, wide band-gap II-VI semiconductor nanowires have been the subject of intense research due to their potential applications in optical and opto-electronic devices in the UV and visible range. The suitability of these nanowires depends largely on, among other factors, their crystal structure, and type and density of structural defects. We present our work on the study of optical response of individual II-VI nanowires, and their correlation with the structural properties of the nanowires. We have employed spatially-resolved confocal micro-photoluminescence spectroscopy to study the optical properties and transmission electron microscopy to study the structural properties of the single nanowires.

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