**SAMPLE ABSTRACT**

**THE TITLE OF YOUR RESEARCH IN CAPS AND BOLD USING COURIER NEW FONT SIZE 11. Your name, names of other student or research participants, mentor’s name. Department of Research, Smith University, City, State.**

A paragraph describing your research typed in Courier New size 10 font. Everything should be left-justified. An abstract should be no longer than one page. Abstracts that do not follow the format will be returned.

**Sample Abstract:**

**DEVELOPMENT & SPECTROSCOPIC CHARACTERIZATION of CR+2 DIFFUSION DOPED ZNSE FOR MID-INFRARED LASER APPLICATIONS**. **Jane Doe, Joe Doe, Dr. John Smith. Department of Physics, Hampton University**

**Hampton, VA, 23668.**

Tunable mid-infrared (MIR) solid-state lasers are of considerable importance for various scientific applications, for instance laser atmospheric remote-sensing, medical procedures, analytical spectroscopic techniques, and military related technologies. An attractive technology of MIR solid-state lasers is based on Cr2+ doped II-VI semiconductors (e.g. ZnSe, CdTe, CdMnTe). The main challenge to further optimize current Cr2+ lasers lies in the optimization of the Cr doping process, which ultimately can results in higher quality laser crystals. For the production of Cr2+ laser materials, Cr2+ ions are introduced via post-growth diffusion doping in a polycrystalline ZnSe window material. The objective of this research project is to optimize the Cr diffusion process in ZnSe (and other II-VI hosts) in terms of furnace temperature, diffusion time, dopant source (Cr, CrSe, CrTe, and CrCl2), dopant purity, and dopant morphology. First experiments using CrSe as a dopant source have been carried out. Cr2+ ions were doped into ZnSe under isothermal conditions at 750˚C at ~4 days. The absorption spectrum of Cr: ZnSe showed a characteristic broad absorption band peaking at ~1.77µm. Using a Tm fiber laser operating at 1.9 µm as the excitation source resulted in a broad MIR emission from ~2000-3000nm. The Cr2+ lifetime was determined to be around ~5–7 µs at room temperature. The lifetime was nearly temperature independent, which suggest a high emission efficiency at room temperature. Further studies on diffusion doping of Cr2+ into ZnSe are still in progress and will be presented at the conference.

**Standard Poster Size: 36” x 36” or 3ft. x 3ft. – POWERPOINT FORMAT**

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