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Upconversion Studies of Er3+ Doped into Low Phonon-Energy Hosts KPb2Cl5 and KPB2Cl5 via 0.97 μ m and 1.5 μ m Laser Excitation¹ A. BLUIETT, Elizabeth City State University, E. BROWN, U. HOMMERICH, Hampton University, S.B. TRIVEDI, Brimrose Corporation — A comparative study of the wavelength dependence of the Er3+ upconversion in low phonon-energy hosts KPb2Cl5 and KPb2 Br5 will be presented. Initial measurements indicate that visible and infrared upconversion was generated under 0.97 μ m and 1.5 μ m laser excitation. Using time resolved emission, spectral emission, and spectral absorption data the dominant upconversion mechanisms involving excited state absorption and/or energy transfer were investigated. In addition, special emphasis was geared toward a comparative study of the detrimental effects of upconversion under resonant pumping conditions (1.5 μ m) for possible applications in the eye-safe wavelengths (1.5 – 1.6 μ m) region.

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Althea Bluiett Elizabeth City State University

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