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Ionic Transport and Structural Characterization of the Lithium-Rich Anti-Perovskite Li3OCl JOHN HOWARD, University of Nevada - Las Vegas, LUKE DAEMEN, MONIKA HARTL, JERZY CHLISTUNOFF, Los Alamos National Laboratory, YUSHENG ZHAO, University of Nevada - Las Vegas — We will discuss the structural and electrochemical characterization of the newly synthesized lithium-rich anti-perovskite, Li_3OCl. The crystal structure of this compound was solved using x-ray diffraction techniques, and the electronic and ionic conductivities were measured using electrochemical impedance spectroscopy. This material has an ionic conductivity ranging approximately from 10^{-4} S/cm to 10^{-1} S/cm over the temperature range 25°C to 270°C (room temperature to just below the melting point). The high ionic conductivity of this lithium-rich electrolyte demonstates strong promise that this material is an ideal candidate for solid state battery applications.

Luke Daemen
Los Alamos National Laboratory

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