

Abstract Submitted
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High Pressure Transport and Structural Study on the Honeycomb Lattice Iridates $A_2\text{IrO}_3$ ($A = \text{Na}, \text{Li}$) YOGESH SINGH, Indian Institute of Science Education and Research (IISER) Mohali, Knowledge City, Sector 81, Mohali 140306, India, SAMAR LAYEK, School of Physics and Astronomy, Tel-Aviv University, 69978, Tel-Aviv, Israel, KAVITA MEHLAWAT, Indian Institute of Science Education and Research (IISER) Mohali, Knowledge City, Sector 81, Mohali 140306, India, ERAN GREENBERG, GREGORY KH. ROZENBERG, MOSHE P. PASTERNAK, School of Physics and Astronomy, Tel-Aviv University, 69978, Tel-Aviv, Israel — The honeycomb lattice iridates $A_2\text{IrO}_3$ ($A = \text{Na}, \text{Li}$) have been predicted and shown to exhibit novel magnetic properties which suggest that these materials could realize bond-directional Kitaev-like magnetic exchange interactions [1 - 5]. We will present high pressure (P) electrical transport ($P \leq 80$ GPa) and powder X-ray diffraction ($P \leq 40$ GPa) on these materials. The PXRD data for both materials show a structural transition around $P \sim 5$ GPa. The transport data show a dramatic reduction of the charge gap for Na_2IrO_3 . References: [1] J. Chaloupka, G. Jackeli, and G. Khaliullin, Phys. Rev.Lett. **105**, 027204 (2010). [2] Y. Singh and P. Gegenwart, Phys. Rev. B **82**, 064412 (2010). [3] Y. Singh et al., Phys. Rev. Lett. **108**, 127203 (2012). [3] F. Ye et al., Phys. Rev. B **85**, 180403 (2012) [5] S. H. Chun et al. Nature Phys. **11**, 462 (2015).

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