

Abstract Submitted  
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**Properties of alkali-doped aromatic hydrocarbons under extreme pressures** ELLA OLEJNIK, ANNE MARIE SCHAEFFER, SHANTI DEEMYAD, University of Utah — While structures of benzene (C<sub>6</sub>H<sub>6</sub>), which is the simplest and most abundant aromatic hydrocarbon in the solar system, have been extensively studied under pressure, the properties of benzene derivatives are poorly studied under extreme conditions. In this work, we studied the pressure dependent structural properties of Phenylithium (C<sub>6</sub>H<sub>6</sub>Li) which is one of the simplest organo-alkali metallic compounds, in a diamond anvil cell for upto 32 GPa. We observed the initial polycrystalline lines under pressures of a few GPa. With the increasing of pressures, we have seen evidence of formation of new crystal structure under above 32 GPa with strong single crystal line. Phenylithium has a strong luminescence under pressure which was evidenced by the changing color of the sample to orange. The structural studies have been done in advanced light source.

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