

Abstract Submitted  
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**Electron spin resonance of polymer polyvinyl pyrrolidone Doping In Topological Insulator Bi<sub>2</sub>Se<sub>3</sub>.** YEOJIN LEE, GI WAN JEON, KYU WON LEE, DO WAN KIM, DONG MIN CHOI, CHEOL EUI LEE<sup>1</sup>, department of physics. korea univ — In this work, we have studied microscopic properties of hydrogen-mediated bismuth selenide by employing electron spin resonance (ESR) measurements. Bismuth selenide was synthesized through hydrothermal co-reduction method with and without a linear polymer polyvinyl pyrrolidone (PVP). An ESR signal is detected only in PVP added bismuth selenide. The ESR intensity of the donor spins can be described in terms of the intrinsic carrier concentration in semiconductors. The ionization energy is obtained to be 4711meV from the temperature dependency of ESR intensity, which in fact quite compatible to that of hydrogen shallow donors reported in ZnO.

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