**SYSTEMATIC INVESTIGATION OF ADIPRAZINA NONLINEAR OPTICAL SINGLE CRYSTAL**

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**ABSTRACT**

 The nonlinear optical adiprazina single crystal obtained from slow evaporation method at ambient temperature. The crystal structure includes a piperazinium cation located on a crystallographic center of symmetry brings up the chair conformation in the crystal. The adipate anion contribute trans-trans-trans conformation. Lattice parameters of the synthesized crystal obtained from single crystal x-ray diffraction analysis. Thermal and mechanical nature of the crystal studied through TG/DTA analysis and Vickers microhardness test respectively. The nonlinear optical property of the crystal investigated with the help of z-scan technique.

**Keywords**: TG/DTA, S-XRD, Slow evaporation