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DEVELOPMENT OF NANOCATALYSTS FOR ROCKET ENGINE USING PECHINI METHOD IN A
PROPELLANT BASED ON HYDROGEN PEROXIDE**Abstract**

The significance of this research lies in the quest for a sustainable "Green Propellant" that emits the minimal toxic gases. This project aimed to study a hypergolic pair consisting of ethanolamine (C_2H_7NO) and hydrogen peroxide (H_2O_2), while also developing nanocatalysts for this propellant with ultimate goal to create a mixture suitable for space industries. Nanocatalysts were developed and incorporated into hydrogen peroxide (H_2O_2) to enhance ignition speed. The results obtained are promising and indicate a reduced requirement for catalysts compared to conventional ones, typically on micro scale, as nanocatalysts offer a larger contact area. The developed catalyst comprises a blend of Aluminum Oxide (AlO_3), Cobalt Oxide (CoO), and Manganese Oxide (MnO_2). This study unveils exciting possibilities for the advancement of efficient and environmentally sustainable propellants in space exploration.