

## Study of Half-Metallic Ferromagnetism in CeFeO3

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**Abstract :** Using first-principles calculations based on the density functional theory and generalized gradient approximation, we predict electronic and magnetic properties of CeFeO3 orthorhombic perovskite. The calculated densities of states presented in this study identify the metallic behavior of CeFeO3 when we use the GGA scheme, whereas when we use the GGA+U, we see that it exhibits half-metallic character with an integer magnetic moment of 24 $\mu$ B per formula unit at its equilibrium volume which makes this compound a promising candidate for applications in spintronics.

**Keywords :** CeFeO3, magnetic moment, half-metallic, electronic properties

**Conference Title :** ICMON 2016 : International Conference on Microelectronics, Optoelectronics and Nanoelectronic Engineering

**Conference Location :** Montreal, Canada

**Conference Dates :** July 14-15, 2016