



# **A First-Principles Study of Half-Metallic Ferrimagnetism in $Ti_2FeZ$ ( $Z=Al, Ga, In$ ) Heusler Alloys.**

## **Abstract:**

Using density functional theory with the full potential-linearized augmented plane wave (FPLAPW) method, we study the structural, electronic and magnetic properties of  $Ti_2FeZ$

( $Z = Al, Ga, In$ ) alloys with  $Hg_2CuTi$ -kind alloys structure. These are half-metallic ferrimagnets. In addition to this, the total magnetic moments of Heusler alloys are  $Ti_2FeZ$  agree with the rule  $M_{tot} = Z_{tot} - 18$  Slater-Pauling with a gap energy 0.56, 0.60 and 0.64 eV in the spin down channel, respectively.

Contribution: Invited