**Some physical Properties of B2 type AgY intermetallic compound from Ab-initio Calculations**

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**Abstract**

Intermetallics have superior physical important properties than ordinary metals. Due to interesting properties such as high tensile strength, high melting point and stifness, good oxidation resistance , low mass density, these intermetallic compounds are suitable for many applications in engineering. and industry. Among the B2-type intermetallic compounds, there is a theoretical study on the defect properties of AgY . Here, we have studied structural, mechanics, electronic, vibrational and thermodynamic properties of AgY compound using first-principles methods based on density-functional theory. It can be concluded that AgY in B2 structure are metallic compounds from electronic band structure. AgY is also stable mechanically and dynamically.

**Keywords: DFT, B2 structure, electronic properties, elastic, properties, vibrational properties**