TiSnAu Alloy Concept - Technical Whitepaper

1. Introduction

This document presents a concept and technical evaluation of a novel alloy composed of Titanium (Ti), Tin (Sn), and Gold (Au). The purpose is to create a lightweight, conductive, and thermally efficient material suitable for advanced applications such as mobile device chassis and electromagnetic shielding.

2. Alloy Composition

Composition by weight (example):
- Titanium (Ti): 85%
- Tin (Sn): 12%
- Gold (Au): 3%

3. Simulated Properties

Estimated Physical Properties:
- Electrical Conductivity: 4.30 x 10^6 S/m
- Density: 5.28 g/cm³
- Specific Heat: 0.476 J/g·K
- Melting Point: 1477.6°C
- Thermal Conductivity: 36.14 W/m·K

4. Potential Applications

Potential Applications:
- High-efficiency EMI shielding
- Smartphone or mobile device chassis
- Battery casing with passive heat dissipation
- Lightweight structural components

5. License