Photon-Vibrational Superconductivity

Photon-Vibrational Superconductivity

Inventor: Jovonte Marcellino

Date: June 20, 2025

Abstract:

This document presents a novel superconductivity model titled "Photon-Vibrational Superconductivity," the third original concept in the Superconductor Series by Jovonte Marcellino. The model hypothesizes that ultraviolet (UV) light, modulated by the resonant properties of quartz crystal, can induce superconductive behavior through phase alignment of electron waves-without requiring cryogenic conditions.

Concept Summary:

High-frequency photons (UV light) interact with a quartz crystal, which emits low-frequency mechanical vibrations. These vibrations stabilize and modulate the high-frequency photon field. The resulting field interaction may align the electron wave functions within conductive materials, leading to a superconducting state.

Theory:

- UV photons deliver excitation energy at 7.5×10^{14} to 3×10^{16} Hz.
- Quartz provides mechanical stabilization at known resonant frequencies (kHz-MHz).
- The vibrational-photonic coupling creates a dual-frequency environment conducive to phase coherence.

Proposed Experimental Setup:

Photon-Vibrational Superconductivity

1. UV LED or laser focused through a quartz crystal.

2. Place conductive or superconductive material (e.g., copper, indium-tin alloy) in the emission path.

3. Use a multimeter or oscilloscope to measure resistance, magnetic field response, and persistent currents.

4. Optional: place a magnet near the target material to observe field exclusion (Meissner effect).

Significance:

This model provides a potentially cryogenics-free method for inducing superconductivity using photon-vibration coupling. It builds on known physical effects such as phonon-assisted electron pairing, light-induced phase coherence, and the piezoelectric properties of quartz.

Status:

Original theoretical concept developed and published by Jovonte Marcellino on June 20, 2025.

This document is part of the "Superconductor Series" and is protected under public disclosure and intellectual property timestamping.