

A look into the realm of Room-Temperature Superconductors

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Abstract

Condensation of hydrogen atoms into solid-state (metallic) under high pressure was one key experimental fact in this millennium. Triggering a race to explore the conditions necessary to produce a metallic state in metal-hydride compounds under high-pressures by using a diamond anvil cell, although some laboratories did not only obtain others compounds in metallic-state, they also achieved the superconducting state.

Keywords: Superconductors, Room temperature, High-pressure, Diamond anvil cell.

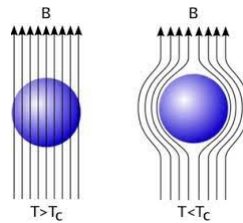


Figure 1: Meissner effect

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References

- [1] . W. Anderson, *Coherent excited states in the theory of superconductivity: Gauge invariance and the meissner effect*, Phys. Rev. **110**, 827 (1958).
- [2] . W. Anderson, *Plasmons, gauge invariance, and mass*, Phys. Rev. **130**, 439 (1963).
- [3] . B. Littlewood and C. M. Varma, *Amplitude collective modes in superconductors and their coupling to charge-density waves*, Phys. Rev. B **26**, 4883 (1982).
- [4] . Ohashi and S. Takada, *On the plasma oscillation in superconductivity*, Journal of the Physical Society of Japan **67**,551 (1998).
- [5] . Shimano and N. Tsuji, *mode in superconductors*, *Annual Review of Condensed Matter, Physics* **11**, 103 (2020).