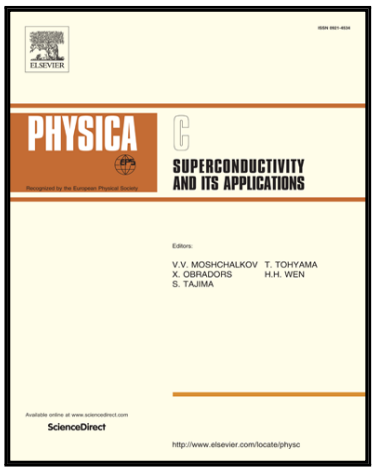

Gradual reduction of the superconducting transition temperature of H_3S by partial replacing sulfur with phosphorus

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Highlights

- Failure to increase critical temperature of hydrogen sulfide by partially replacing sulfur with phosphorus
- Study in the framework of the Eliashberg formalism - the most successful approach to description of the thermodynamic properties of conventional superconductors
- Conventional high-temperature superconductivity in hydrogen-sulfur-phosphorus system
- Benchmark the validity of the virtual crystal approximation by comparison with supercell method and experimental results