

## MgB<sub>2</sub> and the Iron-based Superconductors

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**Abstract** — In the last few years new superconducting materials with intriguing properties suitable for wire developments have come on stage: MgB<sub>2</sub> and the Iron-based superconductors. The different nature of their superconductivity, as well as the different chemistry of these materials, has implications for their range of applicability. The lecture will give an overview of the superconducting properties and of the achievements in wire production and applications. Few remarks on the recent discovery of superconductivity in sulfur hydride above 200 K under high pressure will be included and a comparison across the different compounds will be presented.

**Keywords (Index Terms)** — MgB<sub>2</sub>, iron-based superconductors, wire development, sulfur-hydride superconductors.