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M2Or3I-04: [Invited] Bi-2212 conductors and cables for accelerator magnets

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Recent years have seen significant development of superconducting Bi-2212 wires and magnets in the US with record critical current density, record wire lengths and record performance model magnets. For accelerator magnets, Rutherford cables have been used to construct racetrack coils, common coil dipole, and a canted cosine theta dipole magnet with structural management ability and good field quality. In this talk, we discuss design, fabrication and performance of Bi-2212 wires, their heat treatments, and performance in solenoids. We also discuss fabrication and characteristics of Bi-2212 Rutherford cable, its readiness for accelerator magnet development, the prototyping efforts of building high-performance canted-cosine-theta Bi-2212 magnets, technology gaps (wires, cables, and magnets) that stand in the way of a fully competitive Bi-2212 magnet technology, and ongoing work that address these gaps.

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