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The Prospect and Development of BSCCO Superconductor

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Before the advent of 2G wire such as YBCO conductor, BSCCO based superconductor has been extensively studied and applied in the field of wire, cable and many other electric system. Many superconductor companies such as AMSC, IGC, Nexans, Smitomo have invested a lot of money to commercialize the BSCCO material with rosy dream. Many researchers have expected the technical trend using this BSCCO will dominate in all the HTS application area. However BSCCO superconductor is still one of the most promising materials as a conductor for energy applications. Especially Bi2212 is very attractive materials among the other superconductors because of its easy c-axis alignment, which reduces a weak-link behavior and maintains high critical current density (Jc) of a-b plane orientation. From a practical point of views these features are very important in bulk HTS applications, such as wires, current leads (CL) and fault current limiters (FCL). Typically MCP (Melt Casting Process) is known as one of novel techniques. The advantage of this technique is that any geometry of superconductor with excellent current carrying properties can be easily fabricated. Additionally the temperature and field dependence of the material is superior to sintered HTS bulk parts and is characterized by the absence of weak links.

In this paper we will address the prospect and development of BSCCO superconductor.

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