

Status of 2G HTS Tape Production at SuperOx

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Abstract – The SuperOx group of companies, SuperOx (Moscow, Russia) and SuperOx-Japan LLC (Tokyo), has been working together to manufacture and market high current, low cost 2G HTS tapes for HTS devices. Our core manufacturing technology includes the IBAD-MgO texturing on strong, non-magnetic Hastelloy substrates to make buffer templates and the PLD growth of the GdBCO layer. During the last 12 months we have delivered to customers over 30 km of tape in 4-mm equivalent width. The performance and reproducibility of the production tape have reached the world competitive level and keep improving rapidly. At present we offer tapes with single lengths over 300 m and I_c (77 K, s.f.) of 300-500 A/12 mm and 100-150 A/4 mm. Higher currents and longer lengths have been demonstrated and are available. Properties of the tapes have been independently verified by several reputable institutions around the world. In particular, the critical current of the SuperOx tapes in applied magnetic field in a wide range of practical cryogenic temperatures correlates very well with the critical current in liquid nitrogen in self-field. SuperOx differentiates itself by providing deep customization of the tape to meet specific application requirements, including any thickness of silver and/or copper coatings, surround polyimide insulation, low resistance soldered joints, solder plating, and lamination. In this talk we will present an overview of our production and quality control processes, as well as up to date specifications of the SuperOx 2G HTS tape.

Keywords (Index Terms) – Coated conductors, GdBCO, tape processing technique, IBAD-MgO, high critical currents, lift factor.