

## Ionized Beam Assisted Deposition Used for Texture Template of HTS Coated Conductor

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The fabrication of long-length, high-current-carrying coated conductor is highly desirable for large-scale electric power application of HTS. Long-length coated conductor results of longer than 100 meters with high critical currents have been reported, and it is expected that coated conductor long and good enough for practical application will soon be available. Most of the long and high current carrying coated conductors reported were fabricated using ionized beam assisted deposition (IBAD) texture template. Many materials are being investigated to be used as the IBAD textured film deposited on polycrystalline/amorphous substrates. MgO, when deposited on polycrystalline/amorphous substrates using IBAD, is known to have a very fast evolution of the texture. This makes the IBAD-MgO process much faster than IBAD of other materials such as YSZ (Y-stabilized zirconia), which is one of many reasons IBAD-MgO is attracting much attention to make the texture template needed for HTS coated conductor. An IBAD system which can be used to make up to 100 meter long texture template for HTS coated conductor has been constructed/installed and has been used to make <2 meter long IBAD MgO textured film on polycrystalline Inconel. A general introduction of the IBAD process will be included in the presentation, which will be followed by the international status of IBAD technique used for HTS coated conductor and the description of the current IBAD efforts of Korea for coated conductor development.

keywords : IBAD, coated conductor

### *Acknowledgement*

This research was supported by a grant from Center for Applied Superconductivity Technology of the 21st Century Frontier R&D Program funded by the Ministry of Science and Technology, Republic of Korea.