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Advance in Artificial Pinning of MOD-REBCO Superconducting Coated Conductors

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***Abstract*—This is the recent progress at Shanghai Creative Superconductor which has been presented at Asian Conference on Applied Superconductivity 2023 (ACASC). We have firstly overcome the thickness limitation and achieved 3.2 µm thick film for our MOD commercial tapes. The critical current of our 12 mm tapes increased linearly to 1100 A at 77 K, self-field. We also introduced nano-sized pinning center to our tapes to improve the in-field performance at temperatures below 77 K and magnetic field beyond 3 T. Pre-crystallization has been performed to modify the dispersion and size of the nano-particles.**

***Keywords (Index Terms)*—Flux pinning, MOD, HTS coated conductors, thick films, critical current density**

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