



Contribution ID: 365

Type: **Contributed Oral Presentation**

Improvement of tube type Nb₃Sn conductor in Hyper Tech

Tuesday, 30 June 2015 12:00 (15 minutes)

Tube type Nb₃Sn conductor has been being explored by Hyper Tech Research Inc. Our standard conductor with 217 filament arrays have been generated with 12 T non-Cu Jc values of about 2400-2500 A/mm² with filament size of 40 microns at the 0.85 mm strand. Recently we made 547 filament conductor which has filament size of 25 microns at the 0.85 mm strand without any drawing issue. We are working to improve the non-Cu Jc further. In this paper, creating artificial pinning centers has been used to increase flux pinning in order to raise the Jc overall in the 12-20T range within the tube type Nb₃Sn strands. As a result, the artificial pinning centers refine the grain size by at least half, thereby increasing the layer Jc by at least 20%. Round Nb filament has been made to improve the filament array in the restack conductor to increase the reacted Nb₃Sn area thereby increasing the Jc in the strand.

Primary author: PENG, Xuan (Hyper Tech Research Inc.)

Co-authors: RINDFLEISCH, Matthew; Mr TOMSIC, Michael (Hyper Tech Research Inc.); SUMPTION, Mike (The Ohio State University); XU, Xingchen (the Ohio State University)

Presenter: PENG, Xuan (Hyper Tech Research Inc.)

Session Classification: M2OrA - Superconductor Materials III: Nb₃Sn

Track Classification: ICMC-01 - NbTi/Nb₃Sn/A15 Processing and Properties