



Contribution ID: 930

Type: **Regular 15 minutes Oral Presentation**

## High Field Coil Technology with Bi-2212 Round Wire

*Thursday, 31 August 2017 12:00 (15 minutes)*

One major goal at the NHMFL is the development of high field NMR quality magnets beyond 1 GHz using high temperature superconductors (HTS). Since Bi-2212 is very versatile and can be made in the much more desirable isotropic, round wire, twisted multifilament architecture, it appears to be particularly valuable for high field NMR magnets. We are in the process of building a layer-wound, round-wire Bi-2212 insert magnet, which is expected to approach the 1 GHz limit in combination with our 16.5 T low temperature superconducting (LTS) outsert magnet. A pair of layer-wound Bi-2212 compensation coils will be used to achieve a field homogeneity ( $z_2$  component) targeting the ppm range (10 mm DSV). The implementation of Bi-2212 conductor in such magnets poses various materials, magnet manufacturing, and other technological challenges that are being addressed. A series of test coils are currently being made to address a variety of technological aspects that go along with making this magnet. Here we present the current status and results of the ongoing project.

This work is supported by the National Science Foundation under DMR-1157490, by a grant from the National Institute of Health under 1 R21 GM111302-01, and by the state of Florida.

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**Session Classification:** Thu-Mo-Or31

**Track Classification:** C3 - HTS Insert and Model Magnets