

Abstract Submitted  
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**Construction of TAMU3: A 14 Tesla Nb<sub>3</sub>Sn Model Dipole**<sup>1</sup> EDDIE HOLIK, Texas A&M University, RAYMOND BLACKBURN, NICK DIACZENKO, TIM ELLIOTT, ANDREW JAISLE, ALFRED MCINTURFF, PETER MCINTYRE, DIOR SATTAROV — The third phase of the Texas A&M University Accelerator Research Lab’s “Stress-Managed” high field magnet campaign has coil modules for the assembly of TAMU3. The third phase is the high field,  $B_{max} \geq 12 - 14$  Tesla, proof of principle test of the “Stress-Managed” coil fabrication design philosophy. Earlier dipole phases operated in the 5 – 8 Tesla range using NbTi and early bronze (ITER) Nb<sub>3</sub>Sn based superconductor. These third phase dipole winding modules use the tin rich multi-filament Nb<sub>3</sub>Sn/Cu composite strand with its enhanced engineering current density therefore have the possibility of producing magnetic fields > 14 Tesla, when combined with the evolution of much higher efficiency insulation. There are five modules under construction altogether, which are at various stages. The best performing pair during testing of these modules will comprise the upper and lower modules of TAMU4, a 4x2 cm aperture accelerator prototype dipole. There has also been progress in the fabrication and measurement techniques necessary to validate more accurately the “Stress-Management” approach.

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