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## [Invited] 43+T Grenoble Hybrid Magnet: From final Assembly to Commissioning of the Superconducting Outsert

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The Grenoble Hybrid magnet is a modular platform using resistive and superconducting technologies to produce various DC high magnetic field and flux configurations for the scientific community. They range from 43 T in 34 mm diameter with 24 MW of electrical power to 9 T in 800 mm diameter, when the superconducting coil is used alone. Thanks to the ongoing upgrade of the electrical power installation at LNCMI-Grenoble to 30 MW, and possibly to 36 MW, the possibility to increase the total field up to 45-46 T in the near future is anticipated and studied in detail. The key design parameters will be recalled including the specifically developed Nb-Ti/Cu conductor, the large-bore outsert superconducting coil, the magnet cryostat with its structure including the eddy-current shield, the cryogenic line for the interconnection with the cryogenic satellite and the fully dedicated 150 l/h He liquefaction plant. All components of the hybrid magnet platform have been built, tested and delivered to LNCMI-Grenoble, where integration and final assembly are continuing. The status of the project will be presented together with the main problems encountered and solved. It includes the recent commissioning tests of the cryogenic satellite producing the pressurized superfluid He at 1.8 K as well as the successful powering tests of the specially developed current leads at ultimate current and under fully degraded cooling conditions simulating the worst-case accidental scenario.

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