

Water Cooled Resistive Magnets at CHMFL

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Abstract — The Steady High Magnetic Field Facility (SHMFF) was founded by the National Development and Reform Commission of China (NDRC) in 2008, and is undertaken by the High Magnetic Field Laboratory of the Chinese Academy of Sciences (CHMFL). The project includes the construction of a series of water cooled resistive magnets, superconducting magnets, and a hybrid magnet.

Up-to-date, five water cooled resistive magnets have been successfully installed. In addition, the resistive magnet insert for the 45 T hybrid magnet has also been completed. Two new world records of water cooled resistive magnets have been achieved: 38.5 T/ \varnothing 32 mm and 35 T/ \varnothing 50 mm. Design, optimization, and assembly of the magnets as well as their characterization are described in detail in this presentation.

Keywords (Index Terms) — Water-cooled resistive magnet, high-field magnet, hybrid magnet.