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## **Cryogenic Oscillating Heat Pipe for Conduction-cooled Superconducting Magnets**

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The oscillating heat pipe (OHP) is a two-phase flow device used for transferring heat without external mechanical power. In this paper, a cryogenic OHP with neon as working fluid for conduction-cooled superconducting magnet is fabricated. The mock-up magnet is cooled down with the cryogenic OHP. The cooling down process of the mock-up magnet is investigated, and the effect of the liquid filling ratio on the heat transfer characteristics of the OHP is discussed. The result shows that the cooling down process of the mock-up magnet can be significantly accelerated by the presence of neon in the cryogenic OHP. The cryogenic OHP possesses the optimal liquid ratio, which has the maximum the effective thermal conductivity at the same heat input.

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