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C3Po1B-04: The cooling machnism of liquid nitrogen cooling system

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National Synchrotron Radiation Research Center (NSRRC) designed, fabricated, and implemented a cooling system for a liquid nitrogen (LN₂) tank in the storage ring in 2021. During cooling tests, two significant phenomena were observed: a boiling phenomenon associated with two-phase flow and a rapid cooling phenomenon influenced by the physical properties of oxygen-free copper. This article examines the underlying cooling mechanisms.

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