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## Conduction Cooling Test of Short Period NI HTS Undulator at Different Operating Temperature Ranges 20-77 K

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Recently, a domestic project for the construction of a 4th generation light source, Ochang Advanced Synchrotron for Industry and Science(OASIS), is embarked by the Ministry of Science and ICT in Korea. To increase the performance of the next generation storage ring, Seoul National University in collaboration with Pohang Accelerator Laboratory started a feasibility study on no-insulation(NI) HTS undulator magnet. We designed, constructed, and tested NI HTS undulator coil with 1.5 periods, 14 mm periodic length, and 6 mm magnetic gap. Performance and characteristic parameters of the coil are evaluated at different operating temperature ranges in a conduction cooling circumference: (1) maximum achievable magnetic field; (2) critical current; (3) characteristic resistance; and (4) joint resistivity. Based on the test results, we present preliminary design sets of undulator magnets with different specifications: (1) operating temperature; (2) periodic length; and (3) conductor specification.

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**Primary author:** PARK, Jeonghwan (Seoul National University)

**Co-authors:** Mr KIM, Jaemin (Seoul National University); Dr KIM, Dong-Eon (Pohang Accelerator Laboratory); Dr SHIN, Seunghwan (Pohang Accelerator Laboratory); Dr HA, Taekyun (Pohang Accelerator Laboratory); HAHN, Garam (Pohang Accelerator Laboratory); Mr KIM, Geonyoung (Seoul National University); BANG, Jeseok (Seoul National University); HAHN, Seungyong (Seoul National University)

**Presenter:** PARK, Jeonghwan (Seoul National University)

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