TEST RESULTS OF THE 17 KA EDIPO HTS CURRENT LEADS

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For the new test facility EDIPO (European Dipole), to be hosted by CRPP, a pair of 17 kA HTS current leads has been manufactured. The HTS module, made of AgMgAu/Bi-2223 tapes, is cooled only by heat conduction to the cold end, while the copper part is forced flow cooled by helium gas. A trial HTS module with only four HTS stacks has been preliminarily assembled and tested in liquid nitrogen to assess the soldering process. The test results of the trial HTS module confirm that the Bi-2223 tapes have been not degraded during manufacture. The full current, low voltage test of the 17 kA current leads in spring 2010 is devoted to determine the optimum helium mass flow rates through the copper part for various operation currents, the heat load at the cold end and the contact resistances. Finally, the test should provide an estimate of the operational limits (current sharing temperature, time between stoppage of helium flow in the heat exchanger and the quench of the HTS module) of the HTS current leads. After the test, the instrumentation is removed from the current leads and the high voltage insulation is applied.