

Abstract Submitted  
for the DFD05 Meeting of  
The American Physical Society

**Design and Fluid Dynamic Investigations for a High Performance Light Water Reactor Fuel Assembly** JAN HOFMEISTER, RWE Power AG, Germany, ECKART LAURIN, University of Stuttgart, Germany, ANDREAS G. CLASS, THOMAS SCHULENBERG, Forschungszentrum Karlsruhe — Within the 5th Framework Program of the European Commission a nuclear light water reactor with supercritical steam conditions has been investigated called High Performance Light Water Reactor (HPLWR). This reactor concept is distinct from conventional light water reactor concepts by the fact, that supercritical water is used to achieve higher core outlet temperatures. The reactor operates with a high system pressure, high heat-up of the coolant within the core, and high outlet temperatures of the coolant resulting in a thermal efficiency of up to 44%. We present the design concept proposed by IKET, and a fluid dynamic problem in the foot piece of the fuel assembly, where unacceptable temperature variations must be omitted.

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Date submitted: 10 Aug 2005

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