

PERFORMANCE ASSESSMENT OF A NOVEL GRAPHITE ADSORBER FOR HEAT PUMPS AND CHILLERS

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Abstract

In this paper, the realization and preliminary testing of a novel graphite heat exchanger for utilization in adsorption heat pumps. The design principles and process are described, leading to the final layout of the adsorber. This is made up of graphite plates with a zeolite side, where a SAPO-34 coating has been deposited, and a process side, studied by means of CFD software. Assembly process is also presented, consisting of the bonding of plates by means of an epoxy resin. Finally, preliminary testing as for hydraulic and vacuum leakage identification and performance assessment have been described.