

CONCEPTUAL DESIGN OF THE LIQUID BREEDER VALIDATION MODULE OF IFMIF

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Abstract

The Liquid Breeder Validation Module (LBVM) will be a dedicated set-up devoted to test functional materials for liquid breeder blankets for a DEMO fusion reactor, in the medium flux area of the future IFMIF (International Fusion Materials Irradiation Facility).

Great efforts have been dedicated to the liquid breeder blankets R&D during last years, and the achieved results have turned these breeders into a promising option. However, to perform relevant irradiation experiments in this field is required. Therefore, the necessity and opportunity of the LBVM has come up within the present IFMIF-EVEDA (Engineering Validation and Engineering Design Activities) phase. Several experiments have been proposed for being performed at the LBVM, following the requirements imposed by the main R&D necessities in the field.

This paper summarizes the present status of the conceptual engineering design of this module. The foreseen experiments are described, just as their main technical requirements and features. A first sketch of the irradiation capsules and container is shown, with supporting calculations that assure the feasibility of this conceptual design.