IFMIF-DONES - a new facility for material testing and nuclear physics*

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The IFMIF-DONES (International Fusion Materials Irradiation Facility - DEMO Oriented Neutron Source) is currently in its final design phase within the framework of the EUROfusion Consortium work programme [1]. Its enginnering design will be gradually handed over to the DONES Programme Team in charge of the construction at Escúzar, Granada. The objective of the DONES Programme is the irradiation, study and certification of fusion materials by the generation of a neutron flux with a broad energy distribution covering the typical neutron spectrum of a D-T fusion reactor. It has been identified as a key facility of the EU Fusion Roadmap to allow for the construction of the DEMO Power Plant envisaged to follow ITER [2].

At IFMIF-DONES fusion-prototypic neutrons will be produced in 7Li(d,n) stripping reactions with a D+ beam at an energy of 40 MeV impacting on a flowing liquid Li target. Complementary to its role as a fusion materials irradiation facility the design of IFMIF-DONES facility is considering to allow for the installation of an array of physics experiments which include other non-fusion experiments such as a collimated neutron beam area and a nuclear physics oriented neutron time-of-flight facility [3].

In this contribution I will present the design and current status of IFMIF-DONES. The plans for the implementation of nuclear physics experiments which are considered by the emerging DONES users community will be shown and discussed.

[1] A. Ibarra *et al.*, Nuclear Fusion **58** (2018) 105002.
[2] European Research Roadmap to the Realisation of Fusion Energy, http://www.eurofusion.org/eurofusion/roadmap/
[3] W. Królas *et al.*, Nuclear Fusion **61** (2021) 125002.

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