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P2.195 Development of the Dual-beam ion irradiation facility for FUSion materials (DiFU) at RBI Zagreb

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The Dual-beam ion irradiation facility for FUSion materials (DiFU) is under development at the Ruđer Bošković Institute in Zagreb, Croatia, allowing irradiation of fusion-related samples by one or two ion beams. Two ion beams come to the DiFU chamber at an angle of 170 between them, from 6 MV HVE Tandem VDG and 1 MV HVE Tandatron accelerator. Ion beam handling and scanning systems enable fast electrostatic scanning of the beams over the sample at frequencies 256-3200 Hz in the horizontal and vertical axes, enabling the irradiation of areas from 5x5 to 30x30 mm². The sample holder enables XYZ positioning of heated, cooled or room temperature samples. Ion fluxes are measured indirectly by insertion of two large Faraday cups in ion beams. Besides, the ion flux is monitored continuously by two sets of XY slits, which, in turn, define limits of the irradiation area on the sample. Sample temperature and conditions during irradiation are monitored by a set of thermocouples, an IR camera and a high-sensitive video-camera. The DiFU facility has been developed within EUROfusion Workpackage "Fusion materials".

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