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Surface production of negative ions on different materials in H_2 and D_2 plasmas AHMAD AHMAD, MARCEL CARRERE, JEAN-MARC LAYET, Univ. Provence - CNRS, PRAVIN KUMAR, Inter University Accelerator Centre (IUAC), GILLES CARTRY, Univ. Provence - CNRS — Negative ion formation by dissociative attachment on molecules in low pressure plasmas has been largely studied, whereas, negative ion formation on surfaces has been few investigated. In the present experiment, a sample is placed in the diffusion chamber of a helicon plasma reactor, facing a Hidden EQP mass spectrometer. The sample is biased negatively with respect to the plasma potential. Negative ions formed on the surface upon positive ion bombardment are repelled by the sheath and analysed by the mass spectrometer. The negative ion energy distribution functions are recorded. In a first time we have shown that under positive ion bombardment, a huge number of negative ions are produced on a graphite surface placed in low pressure H_2/D_2 plasma. The goal of the present work is to compare graphite with other materials (amorphous carbon, diamond, doped diamond, silicon...).

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