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Charactarization of Low Energy Plasmas in the device PG-QRO-1

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The Plasma Gun PG-QRO-1 is a Coaxial electrode plasma discharge device with Mather type geometry. This geometry has been used in the past to develop Plasma Foci, which produce a large spectrum in energy, with energies ranging up to tens of keV. The study of the interaction of magnetized plasmas with candidate materials for fusion reactors, is a main topic in fusion research. The PG-QRO-1 device has been tailored to produce plasmas with relevant densities but limiting the high energy spectrum in order to use it for plasma-wall-interaction studies. We present here the study of plasmas of low energy produced with this device. The energy profile of the plasma is determined form the depth profile of samples of different materials exposed to deuterium discharge. The deuterium retention profiles in the materials are very shallow with penetration depths of the order of tens of nm.

Eligible for student paper award?

No

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