

Abstract Submitted  
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**Magnetized plasma flow injection for a dynamo drive in a TPE-RX reversed-field pinch** TOMOHIKO ASAI, SHOTARO SUZUKI, Nihon University, MASAYOSHI NAGATA, University of Hyogo, HARUHISA KOGUCHI, YOICHI HIRANO, HAJIME SAKAKITA, SATORU KIYAMA, National Institute of Advanced Industrial Science and Technology (AIST) — In a reversed-field pinch (RFP) plasma, the poloidal current is sustained through dynamo activity, which is the consequence of mainly tearing (MHD) instabilities. To control the dynamo activity, the method using magnetized plasma flow (MPF) with a large degree of magnetic helicity and dense particle content was proposed and a series of experiments have been performed. The MPF is generated by a magnetized coaxial plasma gun which has capacitor banks of 367mF with a maximum charging voltage of 800V and 20 $\mu$ F, 15kV. In the response to the MPF injection, excited specific mode ( $m = 1/n=5, 6$ ) of magnetic dynamo activity has been observed. While the intensity of these modes is sustained, other modes of magnetic fluctuation keep lower intensity. During the period of MPF injection, increased toroidal magnetic flux has also been observed. This may indicate driven poloidal current through the excited dynamo activity and/ or result of increase confinement because of reduced stochasticity of magnetic field.

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