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On the exploration of molten salt (FLiNaK) interaction with plasma YONG-SUP CHOI, HYONJAE PARK, TAIHYEOP LHO, NFRI — We investigated possibility of application of molten salt as a liquid wall in plasma confinement device. Plasma interactions of molten salt - FLiNaK (LiF 46.5 mol% + NaF 11.5% + KF 42 mol%) were investigated by OES(Optical Emission Spectroscopy) and RGA(Residual Gas Analyzer). The plasma was generated with ECR source and the molten salt was maintained as liquid with SUS 316 mold-heater. Optical and mass spectrums were measured during hydrogen plasma interaction with the molten salt and qualitative analysis of resultant species was done. Chemical/physical erosion of FLiNaK after interaction of hydrogen plasma was studied with ICP-MS and IC (Ion Chromatography). Viscosity change of FLiNaK after plasma interaction was measured. Based on the preliminary measurement result, a plasma interaction system with flowing molten salt was designed.

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