The corrosion of fuel cladding steels by liquid lead is a technological challenge for the development of LFRs. The solution under consideration consists of a protective coating deposited on the outer surface of the cladding tube. Various deposition processes (e.g., PLD, HiPIMS) and coating materials (e.g., Al2O3, FeCrAl) are being evaluated. This study aims to develop and qualify coatings for cladding corrosion protection in terms of key properties, e.g., adhesion during tube deformation and resistance to high temperature. Microstructural and mechanical characterization, as well as lead corrosion and irradiation experiments, will be conducted.

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