

## (Virtual) 1st RCM for CRP Hydrogen Permeation in Fusion-relevant Materials

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### **GDP permeation of bronzes and other structural materials for fusion**

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Fusion reactor is a very complicated system. Hydrogen isotopes interaction with fusion materials includes hydrogen diffusion from gas and plasma through plasma facing and structural (SM) materials into coolant and also diffusion from coolant. A lot of opened questions remain around hydrogen isotopes transport through materials of fusion reactor. The work planned will be focused on permeability of ITER-grade CuCrZr bronzes and on oxides influence on permeability of SMs. Hydrogen diffusion in bronzes is very slow at temperatures below 350 C. In low temperature region measurements are very time demanding, up to several months per one experimental curve. For performing such long experiments a GDP installation is under construction. The installation will allow register permeating flux during months at stable conditions of gaseous D<sub>2</sub> interaction with membrane surface at pressures up to 1 atmosphere.

Keywords: structural materials, RAFMS, bronzes, oxidation, neutron damage, hydrogen isotopes, permeation

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