

## Neutron irradiated W and W alloys

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Tungsten materials have been studied as candidate materials for plasma-facing components of fusion reactors. At present, pure tungsten material is being manufactured by powder metallurgy for ITER divertor tiles, and is being processed for divertor components, and much material data focusing on high-heat-load characteristics are being collected. On the other hand, there is almost no experimental data on the behavior of the high-temperature and heavy-irradiation region of Tungsten by 14MeV neutrons generated from fusion plasma, and the data are being collected gradually by neutron irradiation research using nuclear fission reactors. In this presentation, irradiation data of various characteristics required for fusion reactor applications, such as mechanical properties, heat conduction properties and hydrogen retention behavior caused by damage microstructure development and transmutation elements of neutron irradiated tungsten that have been irradiated in nuclear fission reactors will be reviewed and extract remaining material issues of Tungsten. In order to solve these problems, the concepts currently being considered for how to proceed with heavy irradiation research toward a commercial fusion reactor will be introduced.

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