

Abstract Submitted
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Deuterium retention via highly oxygenated lithium coatings¹

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— Lithium wall conditioning is applied in numerous fusion devices as a means of improving plasma performance. Previously, researchers suspected that these improvements have come from a direct lithium-deuterium interaction, however recent results have shown that lithium catalyzed oxygen plays a more significant role in retaining deuterium. The oxygen concentration increases from 5 at. % in virgin graphite to as much as 45 at. % throughout the process of retaining deuterium in lithiated graphite. This large increase of oxygen is stimulated by and during ion bombardment. While oxygen from within the bulk sample and the ambient vacuum contribute slightly to the high oxygen concentration, pre-gettered oxygen from the lithium deposit contributes more significantly as the source of oxygen. Details of lithium catalyzed oxygen-deuterium retention are presented.

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