Abstract Submitted
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Study of deuterium removal from co-deposited beryllium layers by flash heating[1] JONATHAN YU, RUSS DOERNER, ERIC HOLLMANN, UCSD, RICHARD PITTS, ITER Organization, KARL UMSTADTER, UCSD, UCSD TEAM, ITER ORGANIZATION TEAM — Tritium removal from plasma facing components in ITER will be achieved by standard bakeout (assuming most deposition in the divertor), but a degree of main chamber de-tritiation might be possible with flash heating during rapid plasma shutdown. This main chamber de-tritiation possibility has been investigated in the laboratory, and results suggest that a rapid shutdown radiation flash will not yield significant fuel outgassing from main chamber Be deposits. The linear PISCES-B facility is used to create ∼100 nm thick Be co-deposit layers on a collection plate located outside a deuterium (D) plasma using Be sputtered from a plasma-exposed target. The co-deposit is then illuminated with a 1064 nm laser with ITER-relevant disruption photon flash energy densities and pulse length, and the remaining D content is measured using thermal desorption spectroscopy. Less than 25% of the trapped D escapes from a Be co-deposit even when the flashed sample temperature exceeds 1000 K.

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