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Experimental Investigation of the System of Vertical and Longitudinal Lithium Limiters as a Prototype of Plasma Facing Components of a Steady State Tokamak-Reactor on T-11M Tokamak

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During operation on the tokamak T-11M it was achieved almost complete (up to 80%) closing of lithium circulation circuit between the edge of hot (106K) plasma and the chamber wall. Lithium, emitted by the vertical capillary Li limiter during operations of T-11M has been collected by the cryogenic target and removed outside the tokamak vacuum chamber without disturbing of tokamak operation cycle, what is a key requirement for use of lithium in a steady state tokamak-reactor. In T-11M it was tested a new functional model of the prototype of closed lithium circuit for the protection of chamber wall by a simultaneous using of the vertical lithium limiter T-11M as an emitter of lithium and new longitudinal lithium limiter as its collector. Such technological scheme can be suggested for the steady state fusion neutron source (FNS) on the tokamak basis.

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