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Tritium breeding landscapes: production and benchmarking

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Tritium breeding is an essential element of civilian fusion nuclear energy technologies development paths as it provides a crucial constituent of the plasma fuel. Fusion research and development programs need to establish tritium production in line with fusion energy technologies deployment and development requirements. Tritium, as a radioactive isotope of hydrogen can be produced by nuclear reaction from Lithium compounds. Historically, present at scale production methods, from fission technologies are weighed, while novel fusion orientated needs build from experimental benchmarking using 14 MeV neutron sources and a modern digital twin framework.

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