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# PLENARY TALK : Tribocorrosion in pressurized water reactors

*Wednesday 22 October 2025 09:00 (30 minutes)*

Framatome designs and manufactures pressurized water reactors. In 2023, 63% of electricity produced in France comes from nuclear reactors. Within the reactor, some components are subjected to wear, due to fluid excitation, and to movements of rods used to adapt the reactor's power.

The working environment of these components is pressurized water at high temperature with a dedicated chemistry (150 bars, 320 ℃ et the water contains boric acid (H3BO3) and lithium hydroxide (lithineLiOH) to adapt pH). The aim of boric acid in the water is to moderate the activity of fuel and is adapted along fuel life. It has been demonstrated that some components as Stellite 6 coated latch arms were subjected to tribocorrosion (1). This parameter mustbe considered in the life duration of components. Dedicated test benches have been developed to study tribocorrosion and PhD work engaged with EPFL (2).

(1) E. Lemaire, M. Le Calvar: Evidence of tribocorrosion wear in pressurized water reactors - Wear 249 (2001) 338–344

(2) These n° 6430 (2014), Sandra Guadalupe Maldonado: Tribocorrosion in pressurized high temperature water: a mass flow model based on the third body approach

**Author:** FALCAND, Carole (Tribology Senior Expert, Framatome )

**Presenter:** FALCAND, Carole (Tribology Senior Expert, Framatome )

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