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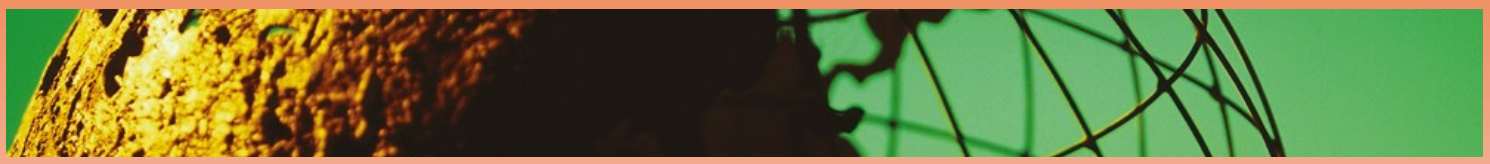
WP4 Nuclear Corrosion



## On the occasion of the CORROSION AWARENESS DAY 2024 the EFC Working Party 4 will hold its 5th online seminar on nuclear corrosion:

# Is copper a safe canister material for long-term storage of nuclear waste?

**SIMS- and TEM-based high-resolution studies of internal corrosion of copper exposed to synthetic groundwater**


Prof. Christofer Leygraf

*KTH Royal Institute of Technology, Stockholm, Sweden*


## Thursday, April 25, 2024, 14:00 to 15:20 CEST (UTC+2)

## Online via Zoom

Please register (free of charge) to receive the link to the virtual meeting room:

*The link will be published soon!*


According to the nuclear waste disposal strategy in Sweden and Finland, copper is identified as the candidate material for constructing canisters during the long-term storage of nuclear waste. Several years ago, a study was initiated wherein copper was subjected to simulated groundwater conditions at both room temperature and 60 °C. The penetration of corrosive species, encompassing S, O and Cl was examined using ToF-SIMS, Nano-SIMS and TEM. The penetration is much faster at 60 °C than at room temperature. O is observed along the grain boundaries while S and H mainly exists within confined areas of the copper matrix. The study seeks to elucidate potential implications on internal corrosion processes, including S-induced stress corrosion cracking and H-induced embrittlement of the copper canister. The ensuing discussion will delve into ramifications for considering copper as a canister material for the long-term storage of nuclear waste.



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**For more activities of the WP 4, please visit www.efcweb.org/wp4.html !**