

# Paris Session 2022



## Laboratory Characterization of Material Interfaces Present in HVDC Joints

### Study Committee D1

### Preferential Subject 2: Materials for Electrotechnical Purposes

Question 2.06: (*Interfaces in HVDC*) “How do we close the gap between small scale laboratory samples and joints installed...?”

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# Material Interfaces and Impact System Reliability

- CIGRE TB 210 (2002) – Interfaces in Accessories for HV and EHV cables
  - Influential factors include
    - *Interfacial roughness*
    - *Contact pressure*
    - *Lubricant*
    - *E-Field Distribution*
    - *Temperature and changes*
    - *Quality of installation*
  - Plus... “Long-term” performance aspects
    - *e.g. Material relaxation, lubricant migration*
- Yet, lab material characterizations typically do not include several of these aspects...
  - and rely upon modeling/full-scale evaluations to predict/validate system performance.

Opportunity exists for an improved laboratory evaluation of the material system...

*which can account for as many of these influential factors as possible*

