

## Composite (hydrophobicity transfer material HTM) insulators: gaps in the standards. Pollution design approach


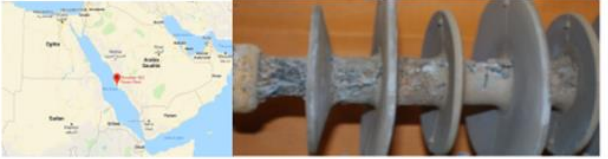


**MATERIALS AND EMERGING TEST TECHNIQUES SC D1**

**PS2 Question 07**

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## Examples of HTM insulator (composites with silicone housing) degradation in harsh environment

- Insulator degradation has been observed especially in harsh environmental conditions,

Italy Sardinia	
Saudi Arabia. Red Sea Coast	
Peru- Close to the Sea Lima region	
Spain <u>Fuerte</u> Ventura	

A. Pigni “Optimal insulator type and dimensioning in harsh service environment,” in *INMR world congress*, Tucson-USA, 2019  
Group Discussion Meeting

## Differences non HTM / HTM insulators with HTM hydrophobicity transfer material

Once the pollution severity is assessed:

- For ceramic insulators (non HTM) the pollution performance is univocally defined once the insulator geometry is defined.
- For HTM insulators (e.g. composites with silicone housing) the pollution performance is not univocally related to the geometry, but may vary during service, following the hydrophobicity evolution

Artificial pollution tests of HTM insulators may be useful to compare different type of products but may hardly represent the evolving service performance.

# Design approach for HTM insulators to limit surface degradation

- Design of HTM insulators may need a different approach with respect to the one adopted for ceramic insulators. The aim of the stress selection (selection of USCD) should be not only to avoid flashover, but also to limit leakage currents which could contribute to the insulator degradation.
- Assessment of critical leakage current values and test procedures to assure that the values will not occur in service (laboratory ageing tests?) may need to be reconsidered.