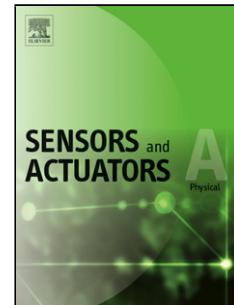


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Development of a detection method based on dielectric spectroscopy for real-time monitoring of meta-cresol contamination in beach-sand

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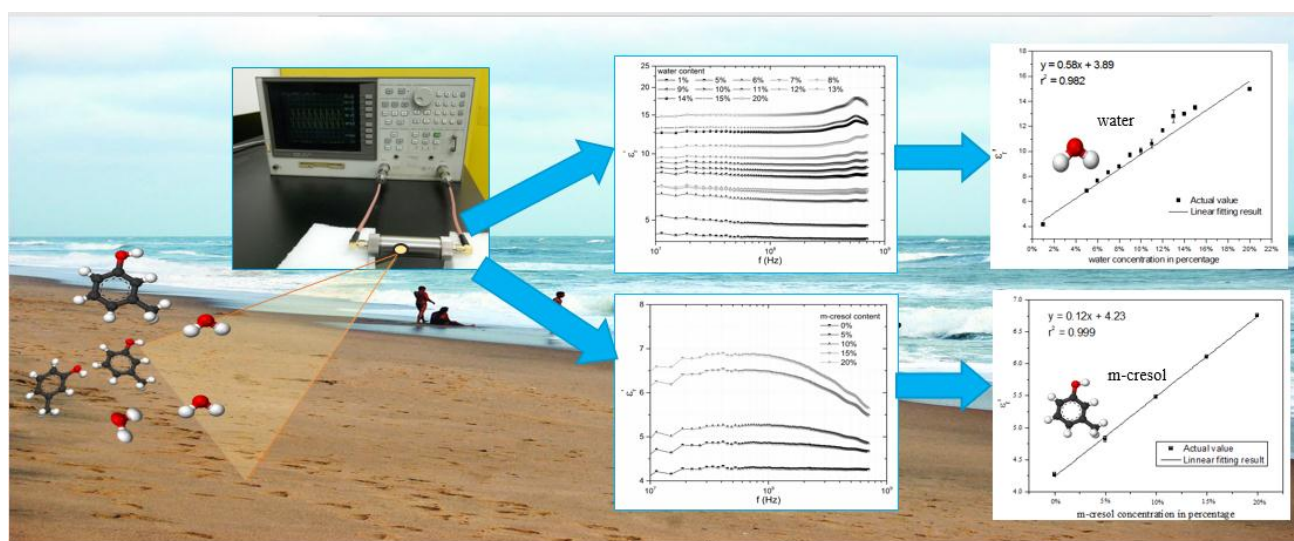
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Graphical abstract



Highlights

- A microwave based, in-vitro, spectroscopic technique has been developed.
- Close-ended transmission line coaxial prototype probe was designed for amplification strategy.
- This novel approach was applied to analyse the polarization mechanisms to better understand the electromagnetic characteristics of beach-sand samples.
- This probe sensitivity is $0.58\%^{-1}$ for water and $0.12\%^{-1}$ for meta-cresol.
- This microwave sensor has broad band frequency (10 MHz – 1 GHz) coverage.

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