

REGULAR POSTERS (15:30 - 16:30)

Session Chair: Eric Fujiwara - UNICAMP, Brazil

Displacement optical sensor applied for underground electrical network intrusion monitoring

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This paper describes a displacement sensor applied for underground electrical network manhole monitoring. An FBG displacement sensor was deployed in a manhole to detect the cover presence. The sensor was tested in the laboratory regarding temperature influence in the displacement measurement. We also show the sensor deployment and the data acquired from one year of field test measurement.

Beer bitterness measurement using Mach-Zehnder interferometer

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This article introduces an innovative optical fiber sensor designed for the assessment of beer bitterness. The sensor utilizes a Mach-Zehnder interferometer (MZI) incorporating two long-period fiber gratings (LPFGs). Leveraging the sensitivity of the LPFGs to the refractive index of the surrounding medium, the sensor detects variations corresponding to the concentration of iso- α -acids responsible for the bitterness in beer. Employing a two-point on-line self-calibrating procedure, the sensor estimates the bitterness of unknown samples by comparing them with reference samples of known bitterness.