

Title (en)

SENSOR AND METHOD FOR DETERMINING A DIELECTRIC PROPERTY OF A MEDIUM

Title (de)

SENSOR UND VERFAHREN ZUR ERMITTLUNG EINER DIELEKTRISCHEN EIGENSCHAFT EINES MEDIUMS

Title (fr)

CAPTEUR ET PROCÉDÉ DESTINÉS À DÉTERMINER UN PROPRIÉTÉ DIÉLECTRIQUE D'UN MILIEU

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Application

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Abstract (en)

[origin: WO2014140151A1] The invention relates to a sensor (300) for determining a dielectric property of a medium (205). The sensor (300) has a substrate (301, 302), which has at least one via (203, 204), and a waveguide (12), which is arranged so as to be planar in relation to an upper surface of the substrate (301). The waveguide (12) can be connected to an analysis device (20) by means of the at least one via (203, 204). Furthermore, the waveguide (12) is designed to receive an input signal from the analysis device (20) and to output an output signal to the analysis device (20). When of the waveguide (12) is in contact with a medium (205), properties of the input signal and of the output signal are indicative of the dielectric property of the medium (205). The arrangement of the waveguide (12) so as to be planar in relation to the substrate (301) enables larger measurement ranges and improved measurement accuracies. Furthermore, a compact construction is achieved by the planar structure. The invention further relates to a sensor arrangement and a method for determining a dielectric property of a medium by means of a sensor.

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See references of WO 2014140151A1

Citation (examination)

- US 2003016032 A1 20030123 - LICINI JEROME C [US], et al
- KJETIL FOLGERØO ET AL: "Permittivity measurement of thin liquid layers using open-ended coaxial probes", MEASUREMENT SCIENCE AND TECHNOLOGY, IOP, BRISTOL, GB, vol. 7, no. 8, 1 August 1996 (1996-08-01), pages 1164 - 1173, XP020064095, ISSN: 0957-0233, DOI: 10.1088/0957-0233/7/8/012
- GHASR M ET AL: "Comparison of Near-Field Millimeter-Wave Probes for Detecting Corrosion Precursor Pitting Under Paint", IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 54, no. 4, 1 August 2005 (2005-08-01), pages 1497 - 1504, XP011136551, ISSN: 0018-9456, DOI: 10.1109/TIM.2005.851086

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