

Title (en)
DIELECTRIC-CONSTANT MEASURING DEVICE

Title (de)
DIELEKTRIZITÄTSMESSGERÄT

Title (fr)
DISPOSITIF DE MESURE DE CONSTANCE DIÉLECTRIQUE

Publication
EP 4196776 A1 20230621 (DE)

Application
EP 21748840 A 20210722

Priority
• DE 102020121154 A 20200811
• EP 2021070511 W 20210722

Abstract (en)
[origin: WO2022033831A1] The invention relates to a high-frequency-based measuring device (1) for determining a dielectric constant of a medium (2), comprising the following components: - a signal-generating unit (11) for coupling an electrical high-frequency signal (sHF) into a transmitting electrode (12) located in the medium (2), the transmitting electrode (12) for emitting the high-frequency signal (sHF) having a depth (h) of at most one quarter of the wavelength (λ) of the high-frequency signal (sHF); - a receiving electrode (13), which is likewise located in the medium (2) and which is located at a distance (d) from the transmitting electrode (13) of at most one quarter of the wavelength (λ) of the high-frequency signal (sHF), for receiving the high-frequency signal (sHF) after the same has passed through the medium (2); and - an evaluation unit (14), which is designed to determine the dielectric constant on the basis of the received high-frequency signal (sHF). As a result of this dimensioning and positioning of the electrodes (12, 13) in relation to the wavelength (λ) of the high-frequency signal (sHF) according to the invention, the measurement accuracy and the measurement sensitivity of the measurement of the dielectric constant can be maximized and, at the same time, a compact design of the measuring device (1) can be achieved.

IPC 8 full level
G01N 22/00 (2006.01)

CPC (source: EP US)
G01N 22/00 (2013.01 - EP US); **G01N 27/221** (2013.01 - US); **G01R 27/2623** (2013.01 - EP); **G01R 27/2635** (2013.01 - EP US)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
WO 2022033831 A1 20220217; CN 116034265 A 20230428; DE 102020121154 A1 20220217; EP 4196776 A1 20230621; US 2023266262 A1 20230824

DOCDB simple family (application)
EP 2021070511 W 20210722; CN 202180056364 A 20210722; DE 102020121154 A 20200811; EP 21748840 A 20210722; US 202118040998 A 20210722