

Title (en)

APPARATUS AND METHOD FOR CAPACITIVE DETERMINATION OF A PROPORTION OF A SUBSTANCE IN A MATERIAL

Title (de)

VORRICHTUNG UND VERFAHREN ZUR KAPAZITIVEN BESTIMMUNG EINES ANTEILS EINES STOFFES IN EINEM MATERIAL

Title (fr)

APPAREIL ET PROCÉDÉ DE DÉTERMINATION CAPACITIVE D'UNE PROPORTION D'UNE SUBSTANCE DANS UN MATÉRIAU

Publication

EP 4111187 A1 20230104 (DE)

Application

EP 20803096 A 20201015

Priority

- DE 102020001370 A 20200225
- EP 2020079039 W 20201015

Abstract (en)

[origin: WO2021170258A1] The invention relates to an apparatus and to a method for the capacitive determination of a proportion of a substance in a material. The apparatus comprises an oscillating circuit having a coil and a plate capacitor, wherein the oscillating circuit can be excited to oscillate at different frequencies or inductances. According to the invention, the frequency response or resonant frequencies of the oscillating circuit are detected and analyzed in respect of characteristic features. On the basis of frequencies which can be allocated to said characteristic features, the proportion of a specific substance in the material to be measured can be determined. The method for capacitive determination of a proportion of a substance in a material is based in particular on the method utilizing the dielectric properties of the substance in order to determine the proportion of the substance in the material to be measured. A proportion of quartz in a dust sample is preferably determined. The quartz proportion in a dust to be measured represents important information because quartz is associated with diseases such as silicosis or lung cancer.

IPC 8 full level

G01N 27/22 (2006.01); **G01N 33/00** (2006.01)

CPC (source: EP US)

G01N 27/221 (2013.01 - EP US)

Citation (search report)

See references of WO 2021170258A1

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)

DE 102020001370 A1 20210826; CN 114930163 A 20220819; EP 4111187 A1 20230104; US 2023117051 A1 20230420; WO 2021170258 A1 20210902

DOCDB simple family (application)

DE 102020001370 A 20200225; CN 202080092546 A 20201015; EP 2020079039 W 20201015; EP 20803096 A 20201015; US 202017798316 A 20201015