Detection method of double capacitor

Can double-input capacitively coupled contactless conductivity detector be used in inorganic ion analysis?
In this contribution,we optimize the structure of double-input capacitively coupled contactless conductivity detector (DIC 4 D) that proposed before by our group and successfully applied it in the capillary electrophoresisof inorganic ion analysis.

Can two electrode pairs arranged in two different capillary channels reduce parasitic stray capacitance?
Jaanus et al. 17 and Stojkovic et al. 18 proposed two electrode pairs C 4 D detector,which are arranged in two different capillary channels. This improvement provided an effective compensationwhich can suppress of the influence of the parasitic stray capacitance and decrease the baseline conductivity of the separation buffer.

Can contactless conductivity detectors improve the performance of capillary zone electrophoresis?
Zemann et al. 6 and Fracassi da Silva et al. 7 proposed the use of C 4 D in capillary zone electrophoresis and proved the advantages of C 4 D. Since then, much effort has been made to improve the performance of the contactless conductivity detectors. Do Lago et al. 8 improved the hardware and optimized the operational parameters.

How to reduce contact resistance and capacity of copper wires?
To decrease the contact resistance and capacity,the gaps between the copper wires were filled with conductive paints. The electrodes and their locations in DIC 4 D were identical to those in C 4 D. To prevent the signal from environmental interferences,a strict electromagnetic shielding was used.

How to measure the conductivity of C4D?
Kang et al. 12,13 adopted an inductance coupling deviceto measure the conductivity of C 4 D and proposed a new C 4 D,which is compensated with the electrode impedance by adding a series inductance from a piezoelectric quartz crystal to decrease the coupling impedance and increase sensitivity.

What is the noise in C 4 D capillary electrophoresis?
As mentioned in the reference 15,27,the noise in C 4 D capillary electrophoresis mainly includes thermal noise,chemical noise from the chemical transformations during the electrophoretic run,noise from the signal generator,and ripple of the high-voltage source.

In this paper, an online detection method based on load classification has been proposed. Several identification parameters are first put forward to classify loads. With these parameters, low-load modeling and monitoring data of the period of industrial users stably out of operation are screened out. Finally, online monitoring is achieved by the principal component ...

XConsecutive failures detection XLive reporting of number of failed capacitors XAdvance alarm for externally fused SCBs fuse-saving XApplied for banks grounded through CT/ Capacitor (Neutral Voltage

Unbalance) Method Discussed in [9]-[11], [15] Method of [13] X X Disclaimer 2 Mentions manual re-set [11], [15] (no demonstration) Disclaimer 2 Mentioned in [15] (no ...

New Method of Capacitors Failure Detection and Location in Shunt Capacitor Banks Hesam Jouybari -Moghaddam-Western University TarlochanSidhu -University of Ontario Institute of Technology Ilia Voloh -GE Grid Solutions Mohammad Zadeh-ETAP 2018 Texas A& M Protective Relaying Conference. Outline o Introduction o Superimposed Reactance method-Ungrounded ...

Based on these, a novel signal detecting method is presented. It enables the common node of the two groups of capacitors to connect to the zero voltage, so that the restriction of the driving force is eliminated and the sensitivity of the gyroscope is increased. This method also supports cancellation of DC voltage mismatch and offset voltage ...

An electromechanical system that can achieve omnidirectional dynamic detection of the electrolytic capacitor surface was designed, and a dataset of six defect types (pin burn, ...

The performance of the proposed method is tested for various cases including identical faults, simultaneous faults, system voltage unbalance in both single and double wyeconnected shunt capacitor ...

In this study, the Lift-off Characteristics (LoC) of the hybrid structures are studied, and an effective method for identifying relevant indications such as defect and anomaly for dual-mode sensor response signals with lift-off interference by combining the testing data of both detection modes and the LoC curve is proposed.

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This work provides a theoretical explanation for the advantages of DIC 4 D, confirms the theoretical analysis with simulation, and validates the DIC 4 D detection method in the application of...

Aimed at the problems of the poor detection stability and low accuracy of the current grain moisture content detection device in harvesters, a dual-capacitor detection ...

In that case, an online moisture detection device was designed, which is based on double capacitors. A new method of capacitance complementation and integration was proposed to eliminate...

An electromechanical system that can achieve omnidirectional dynamic detection of the electrolytic capacitor surface was designed, and a dataset of six defect types (pin burn, pin broken, scratch, damage-s, damage-tb, and deformation) to ...

This work provides a theoretical explanation for the advantages of DIC 4 D, confirms the theoretical analysis with simulation, and validates the DIC 4 D detection method ...

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In literature, a compre-hensive overview of in-situ techniques is used to evaluate the structural and morphological degradation processes, namely, electrochemical dilatometry, electrochemical quartz crystal microbalance (EQCM), scanning electrochemical microscopy (SEM), electrochemical mass spectrometry, X-ray diffraction (XRD), atomic force mic...

In that case, an online moisture detection device was designed, which is based on double capacitors. A new method of capacitance complementation and integration was proposed to eliminate the limitation of single data. The device is composed of a sampling mechanism and a double-capacitor sensor consisting of a flatbed capacitor and a cylindrical ...

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