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ABSTRACTS

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CALCULATION OF DIELECTRIC PARAMETERS BASING ON MEASURED ELECTRICAL PARAMETERS

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Dielectric materials placed in electromagnetic field can change the nature of the field and changes can occur in the material itself. This changing ability of the materials can be characterised by dielectric parameters. Measuring of dielectric properties of materials has gained increasing importance in many research and development fields, especially in material science, microwave treating system design and operation, absorber development, biological research. There are many methods developed for measuring the dielectric properties and each method is limited to specific frequencies, materials, applications. Using transmission line techniques, Voltage Standing Wave Ratio (VSWR), as the ratio of the maximum voltage to the minimum voltage in the standing wave, is measured for a section of waveguide or coaxial line filled with the material sample under test. Results of our measurements were evaluated by three methods. The obtained results were compared and the outcome of this investigation is published in this study.

EFFECT OF OZONE PRETREATMENT OF SUGAR INDUSTRIAL WASTE WATER ON MICROFILTRATION PARAMETERS

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The sugar industry uses high amount of good quality water for the making of it's products. During the process, the pre-cleaning in a floating carapace and the washing of the sugar beet in rotating drum has high water demand (approximately 500 and 150% of the sugar beet). The sugar industrial wastewater contains organic and non-organic mechanical contaminants and characterised by high biological and chemical oxygen demand.
The aim of this work was the investigation of the effect of $Ca(OH)_2$ and ozone pretreatment on microfiltration parameters such as flux, fouling coefficient and the COD retention at pH 6 and 9. The fouling mechanisms also were investigated. It was found that the ozone pre-treatment and the added calcium-hydroxide resulted higher fluxes and decreased the membrane fouling during the filtration. Results verified that the microfiltration can be intensified with ozone pre-treatment and added calcium-hydroxide.
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