

Studi Analisis Sifat Dielektrik Tanah dengan Variasi Porositas Pada Frekuensi Resonansi Rendah

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Author Order	of
Accreditation	
Abstract	<p>The equipment to measure dielectric properties of soil samples with lissajous method has been designed in Electronic and Instrumentation Laboratory, Faculty of Science and Technique, Jenderal Soedirman University, Purwokerto. The fundamental parts of this equipment are signal generator, cathode ray oscilloscope (CRO) and parallel plate. Thus, the soil samples which be researched is placed in zone between parallel plate, as dielectric material. If signal generator supply electric field into the parallel plate, hence response of samples to electric field is shown with voltages values on oscilloscope (CRO). Based on this voltages values, so that can be calculated a dielectric permittivity, dielectric loss and tangent loss of soil samples. The number of samples that measured its dielectric properties are three samples, which contains of top soil, smooth sand of river, and sediments rocks. The measurement to dielectric properties with variation of porosity is done to samples at low resonance frequency of 600 kHz and 2,75 MHz. The results which obtained show that a linear relation between dielectric constant of soil samples to its porosity, but with empirical equations different for every samples.</p>
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