

Dielectric spectroscopy of pharmaceutical drug (Paracetamol) dosage in water

Abstract

This paper discuss about the dielectric measurement on different concentration of pharmaceutical drug using Agilent 85070E High-Temperature and Slim form probe. A microwave dielectric measurement is set up to measure dosage of drug in solution. It is well-known as non-destructive and rapid method. In this work, the drug used is paracetamol because it is a common consumed pharmaceutical drug by public as mild painkiller. The dielectric measurement was conducted on paracetamol from 200 MHz to 10 GHz. The solution of paracetamol was prepared in various concentrations (molarity). Solution with different concentration will exhibit different dielectric properties. A P-Series Network Analyzer (PNA) is used to measure the dielectric properties.

Keywords — Dielectric constant, dielectric losses, moisture measurement, pharmaceuticals, spectroscopy