

## **Finite element analysis of simple rectangular microstrip sensor for determination moisture content of Hevea rubber latex**

### **ABSTRACT**

The Finite Element Method, FEM has been successfully used to model a simple rectangular microstrip sensor to determine the moisture content of Hevea rubber latex. The FEM simulation of sensor and samples was implemented by using COMSOL Multiphysics software. The simulation includes the calculation of magnitude and phase of reflection coefficient and was compared to analytical method. The results show a good agreement in finding the magnitude and phase of reflection coefficient when compared with analytical results. Field distributions of both the unloaded sensor as well as the sensor loaded with different percentages of moisture content were visualized using FEM in conjunction with COMSOL software. The higher the amount of moisture content in the sample the more the electric loops were observed.

**Keyword:** Finite element analysis; Moisture content; Hevea rubber latex

