

Microwave antenna sensing technique for determination of moisture content in Hevea Latex from Hevea Brasiliensis Tree.

ABSTRACT

This paper presents microwave antenna sensing technique for determination of moisture content in hevea latex from Hevea brasiliensis tree. The measurement set-up includes computer-controlled Professional Network Analyzer (PNA) (model N5230A) and monopole antenna. The relationship between reflection coefficient magnitude and moisture content in hevea latex was investigated from 2.2 GHz to 2.7 GHz. The linear functional relationship between reflection coefficient magnitude and moisture content at 2.30 GHz was used to estimate the amount of moisture content in hevea latex as well as the sensitivity and linearity of the antenna in the measuring process. Significant correlation between predicted and measured values of reflection coefficient suggests the potential of this technique for determination of moisture content in hevea latex. This technique can also estimate the amount of moisture content in hevea latex within the performance similar to commercial moisture meters.

Keyword: Hevea latex; Moisture content; Reflection coefficient