

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Development of dielectric biosensors for diagnostic applications

CHRISTOPHER BASSEY, Western Kentucky University, Bowling Green, KY 42101 — Dielectric biosensors utilize the intrinsic electrical properties (permittivity and conductivity) of materials to determine their dielectric characterization. Dielectric measurements, both in vivo and in vitro, provide information on the electrical properties of biomaterials (tissues and organs) as a function of frequency. This information can be used to determine the state of health of the subject since diseased and healthy tissues show significantly different dielectric characteristics. The dielectric properties of tissues depend largely on their water contents, hence dielectric data can provide information on the level of dehydration. In this work, the development of instrumentation and methods for determining dielectric properties of biomaterials is proposed. The principle of using dielectric data for diagnostic purposes is discussed.

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Date submitted: 05 Dec 2005

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