

A Radiofrequency Spectrophotometer Device to Detect Liquids in Gastroesophageal Ways

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Abstract : There exists a wide array of ailments impacting the structural soundness of the esophageal walls, predominantly linked to digestive issues. Presently, the techniques employed for identifying esophageal tract complications are excessively invasive and discomforting, subjecting patients to prolonged discomfort in order to achieve an accurate diagnosis. This study proposes the creation of a sensor with profound measuring capabilities designed to detect fluids coursing through the esophageal tract. The multi-sensor detection system relies on radiofrequency photospectrometry. During experimentation, individuals representing diverse demographics in terms of gender and age were utilized, positioning the sensors amidst the trachea and diaphragm and assessing measurements in vacuum conditions, water, orange juice, and saline solutions. The findings garnered enabled the identification of various liquid mediums within the esophagus, segregating them based on their ionic composition.

Keywords : radiofrequency spectrophotometry, medical device, gastroesophageal disease, photonics

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