

Surface plasmon resonance detection of copper corrosion in biodiesel using polypyrrole-chitosan layer sensor

ABSTRACT

Copper corrosion is one of the important parameters used for evaluating the quality of biodiesel. In this work, a polypyrrole-chitosan sensing layer was utilized for the detection of Cu^{2+} in biodiesel using the surface plasmon resonance technique. With the sensitivity of this sensor being about 0.1 ppm, different corrosion levels could be recognized in samples that were classified as class 1a according to the standard copper strip test.

Keyword: Surface plasmon resonance sensor; Biodiesel; Corrosion; Polypyrrole-chitosan