

## **Surface plasmon sensor based on polypyrrole multiwalled carbon nanotube composite layer to detect Al (III) in aqueous solution**

### **ABSTRACT**

In this study, the concentration of aluminum ion was measured using the surface plasmon resonance technique with polypyrrole multi-walled carbon nanotube composite layer and polypyrrole chitosan layer. The experiments were carried out at room temperature. The results of the measurement of the concentration of aluminum ion with polypyrrole multi-walled carbon nanotube layer were compared with that of the concentration of aluminum ion with polypyrrole chitosan layer. The angle shift for the polypyrrole multi-walled carbon nanotube composite layer was larger than the angle shift of the polypyrrole chitosan layer. The limitation of sensors was about 0.1 ppm.

**Keyword:** SPR sensor; Multi-walled carbon nanotube; PPy-CHI; Al ion