

# Near-Infra Red Optical pH Sensor based on SPEEK-Polyaniline Polyelectrolyte Complex

## **Abstract:**

Polyelectrolyte complex (PEC) membrane based on sulfonated poly(ether ether ketone) and polyaniline (SPEEK-PANI) was developed for optical pH sensing application. Aniline was polymerized in the presence of SPEEK membrane by using *in situ* chemical oxidative polymerization to yield an ionically crosslinked SPEEK-PANI membrane. The fabricated membrane exhibited sensitivity in the physiological pH range of 2-8. The PEC membrane optical pH sensor showed good absorption properties in the near-infrared region (NIR). The performance, durability and response time of the fabricated PEC membrane were assessed for potential application as NIR optical pH sensor.