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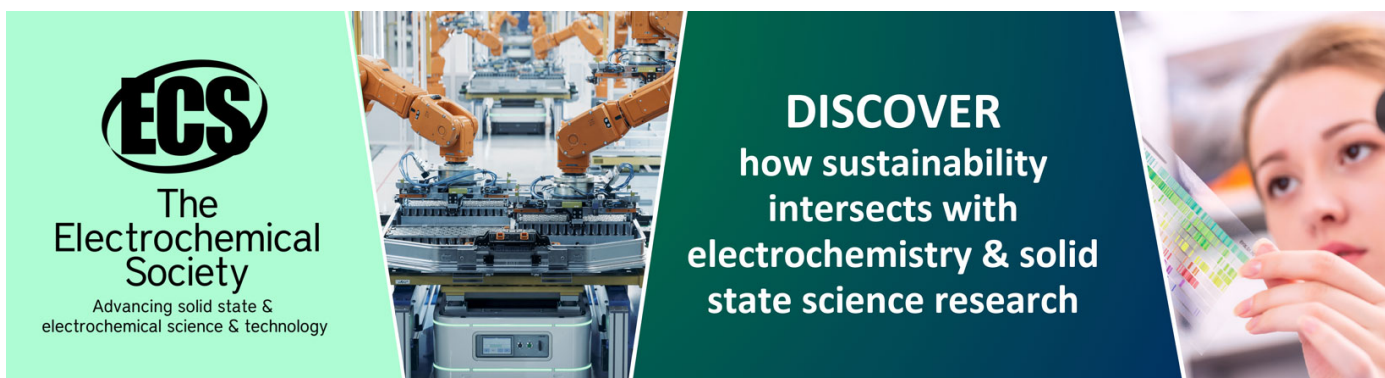
Stability comparison between two optical refractometer techniques

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Stability comparison between two optical refractometer techniques

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Abstract. Two optical fibre refractometers are presented; both measure the change in refractive index of an external medium via measurement of the reflectivity of an optical fibre tip. One application of this technology lies in detection of hydrogen using palladium coatings. The first refractometer uses a single source with a probe and reference arm on separate optical fibres, while the second is a dual-wavelength system with a common path for probe and reference beam. We have characterised both systems to compare their sensitivity and long term stability to determine the most suitable configuration in terms of minimising drift and noise.

