

## Internship: Determination of $\text{Hg}^{2+}$ and $\text{As}^{3+}$ differential absorbance spectra

**Location:** Wetsus – European Center of Excellence for Sustainable Water Technology, Leeuwarden

**Duration:** Between 3 – 6 months

**Salary:** 350,- / month

**Introduction:** Arsenic and mercury ions are toxic in trace amounts and are a concern for drinking water sources throughout the world. We have developed an optical method of detection that can be integrated into a handheld sensor. Inorganic ions are identified using near infrared (NIR) light by probing the vibrational overtones of water. The OH bond is uniquely influenced by dissolved ions and thus the salt content of a water sample can be indirectly probed by NIR spectroscopy (see Figure 1).

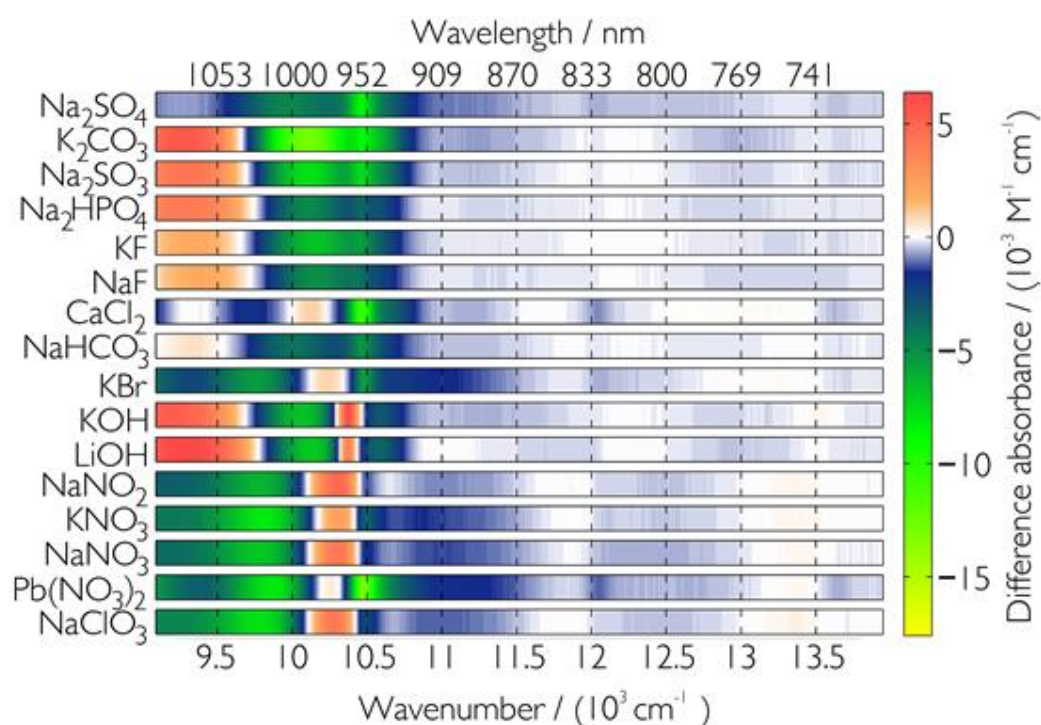


Figure 1 – Spectral fingerprint of 16 electrolytes.

**Task description:** You will work in the optical lab within the multidisciplinary institute Wetsus. There you will characterize the NIR spectral fingerprint of aqueous solutions of arsenic and mercury compounds.

**Candidate Profile:** You are a bachelor or master student with a background in optics, spectroscopy, or physical chemistry with an affinity for optics. Strong communication and good organizational skills along with an experimental background are essential. Most important you are highly motivated.

If you have questions or are interested in applying for this opportunity, please feel free to contact me: [g.w.steen@utwente.nl](mailto:g.w.steen@utwente.nl) / [gerwin.steen@wetsus.nl](mailto:gerwin.steen@wetsus.nl)

Only students from the European Union can apply.