

Aquaphotomics Study of Interfacial Water Adjacent to the Hydrophilic Polymer Nafion

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Abstract

Here we report characterization of interfacial water, so called -exclusion zone water [1] adjacent to the surface of hydrophilic polymer Nafion (well-known and potent exclusion zone creator). The characterization was performed using aquaphotomics multivariate analysis [2] for the purpose of identification water molecular structure and its absorbance pattern associated with formation of exclusion zone water.

Using this approach in repeated experiments we were able to identify formation of increased hydrogen bonding and larger water structures in the exclusion zone water.

The method used could also be developed for monitoring the state of water in living structures, because it is rapid, cost effective and most importantly non –invasive.

References

- [1] G. H. Pollack, The Fourth Phase of Water, Ebner and Sons Publishers, Seattle, WA, 2013
- [2] R.Tsenkova, Introduction to Aquaphotomics: dynamic spectroscopy of aqueous and biological systems describes peculiarities of water. Journal of Near Infrared Spectroscopy, 2009. 17: p. 303-314.