

# **Aquaphotomics as a potential approach for monitoring of water filtration treatment**

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## **Abstract**

Near infrared spectroscopy, with a newly developed concept of aquaphotomics, was used to analyze water structure between consecutive phases of filtration. These findings have shown that the monitoring of the water spectral pattern can provide new information regarding the qualitative and quantitative changes in water structure which has occurred during filtration.

In this study, near infrared spectroscopy technique and aquaphotomics spectral analysis, were used to investigate the application of five stages filtering system to characterize the effects of various perturbations on NIR spectra of tap water in terms of hydrogen bonding, using the first overtone of the OH stretching band (1300–1600 nm).

Acquired results present a new approach in water quality monitoring, which is easy to use, time saving and a cost-effective method. This method enables continuous monitoring of water changes as a multidimensional molecular system that can indicate the need for further more detailed analysis by conventional methods.