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Abstract Formulary

Presentation type: **Oral** ✔ **Poster** ✔

Title: Aerogel-lined capillaries for Raman diagnostics in aqueous media

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ABSTRACT (Space limited to 2200 characters)

We here present a method for the generation of aerogel-lined capillaries, which serve both, as fluid and waveguide. We utilized these aerogel-lined capillaries in a Raman sensor and were able to gain the detectable Raman signals by a factor of 27 when the aqueous analyte was confined within a 20 cm long aerogel-lined capillary. Therefore, we will also present the Raman signal gain performance of the aerogel-lined capillaries and will discuss the effect of the properties of the aerogel-lining onto its Raman signal gain. Further advantages of aerogel-lined capillaries arise from the hydrophobicity of the aerogel which avoids the contact between the aerogel and the aqueous analyte and herewith reduces the risk of fouling and scaling. With a view to utilize aerogel-lined capillaries for monitoring the synthesis of acetic acid from biological sugar we could show that the Raman signal gain of aerogel-lined capillaries remains stable when exposed to an aqueous mixture of glucose, ethanol and acetic acid for a period of one week.

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