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Published in:
Vibrational Spectroscopy

Link to article, DOI:
[10.1016/j.vibspec.2016.08.005](https://doi.org/10.1016/j.vibspec.2016.08.005)

Publication date:
2016

Document Version
Peer reviewed version

[Link back to DTU Orbit](#)

Citation (APA):
Frøhling, K. B., Alstrøm, T. S., Bache, M., Schmidt, M. S., Schmidt, M. N., Larsen, J., ... Boisen, A. (2016). Surface-enhanced Raman spectroscopic study of DNA and 6-mercapto-1-hexanol interactions using large area mapping. *Vibrational Spectroscopy*, 86, 331-336. DOI: 10.1016/j.vibspec.2016.08.005

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Surface-enhanced Raman spectroscopic study of DNA and 6-mercapto-1-hexanol interactions using large area mapping

Kasper Bayer Frøhling^{a,*}, Tommy Sonne Alstrøm^b, Michael Bache^a, Michael Stenbæk Schmidt^a, Mikkel Nørgaard Schmidt^b, Jan Larsen^b, Mogens Havsteen Jakobsen^a, Anja Boisen^a

^a *Technical University of Denmark, Department of Micro- and Nanotechnology, Ørsteds Plads building 345Ø, 2800 Kgs. Lyngby, Denmark*

^b *Technical University of Denmark, Department of Applied Mathematics and Computer Science, Richard Petersens Plads building 324, 2800 Kgs. Lyngby, Denmark*

* Corresponding author. Tel.: +45 45255890, Fax: N/A

E-mail address: kasper.frohling@gmail.com (K.B. Frøhling).

Supplementary information

S1. Example of fitted peak

Figure S1 shows a fitted peak in a given spectral window. The background was modelled as a straight line as shown in the figure. The model is seen to accurately fit the peak in the spectral range in which it was applied.

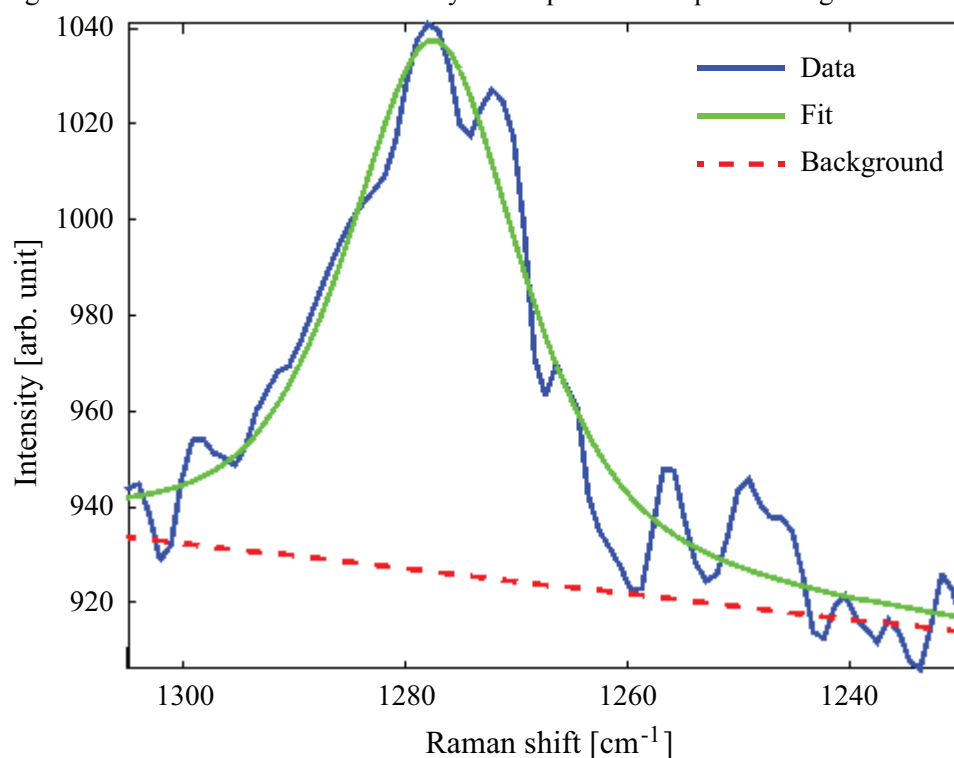


Figure S1: Example of a fitted peak using a pseudo-Voigt model and a linear background. The fit is seen to accurately model the data with the spectral noise.

S2.

Full range average (n=300) spectra of DNA immobilized on gold nanopillars

Figure S2 shows the average spectra of varying incubation time of DNA on the gold nanopillar surface. No particular Raman activity is observed outside the 1000-1750 cm^{-1} range showed in Figure 2.

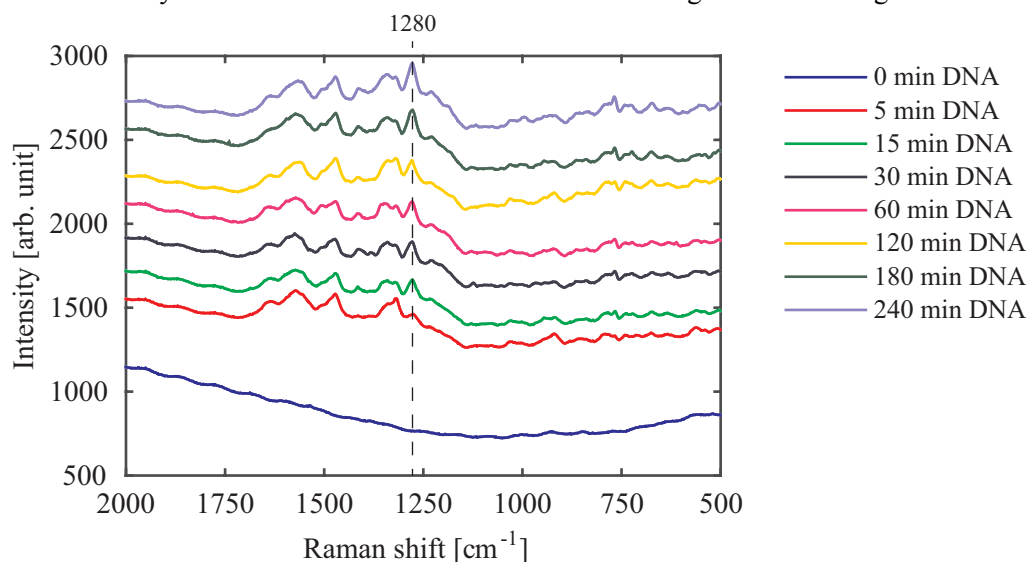


Figure S2: Full range average (n=300) spectra of DNA functionalised nanopillars for varying incubation time.

S3.

Full range average (n=300) spectra of MCH immobilized on gold nanopillars

Figure S3 shows the average spectra 2 mM MCH incubated for 1 hour on cleaned nanopillars. A peak at 1300 cm^{-1} and the characteristic double peak around 1085 cm^{-1} are clearly seen. This is considered as the “pure MCH” spectra when analysing DNA immobilized on gold nanopillars.

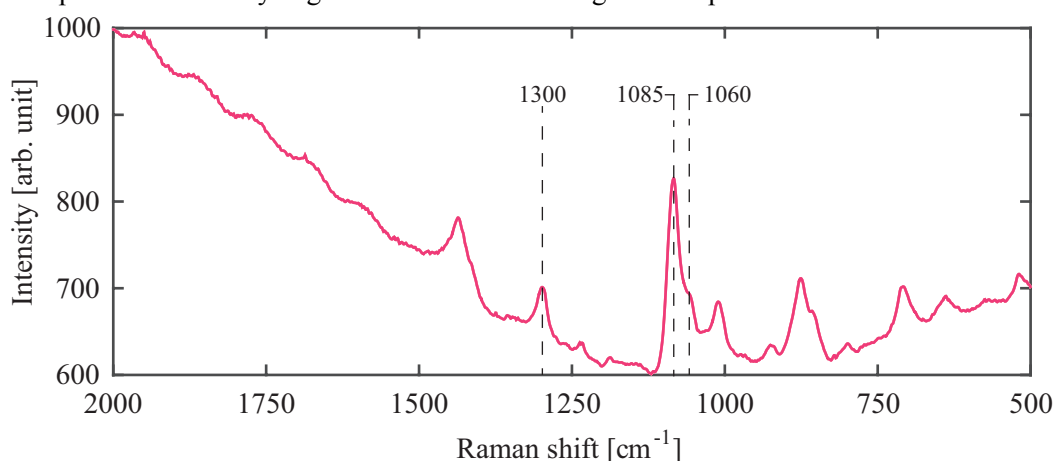


Figure S3: Average spectra of 2 mM MCH on cleaned nanopillars. A peak at 1300 cm^{-1} and the characteristic double peak around 1085 cm^{-1} are clearly seen.

S4.

Full range average (n=300) spectra of varying MCH concentration on gold nanopillars with immobilized DNA

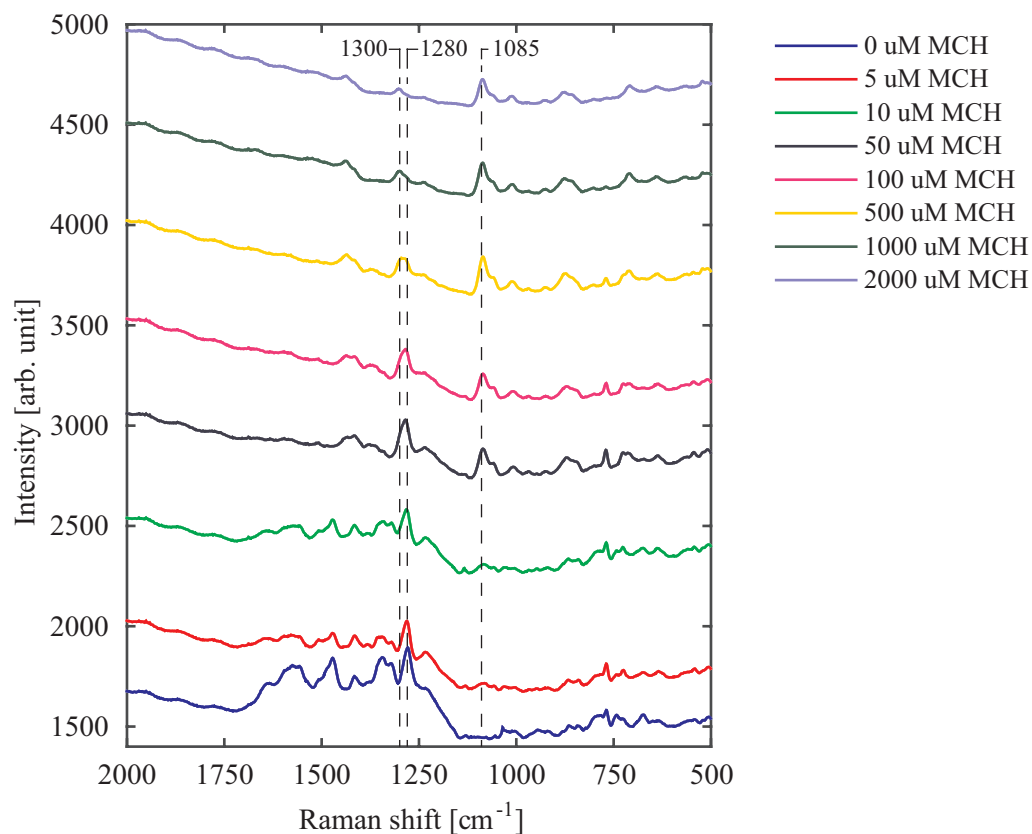


Figure S4: Average spectra of varying MCH concentration on gold nanopillars with immobilized DNA. It should be noted that the characteristic double peak of MCH around 1085 cm⁻¹ is not observed until 50 μ M.