

Accepted Manuscript

Title: Fluorescence spectroscopy as a specific tool for the interaction study of two surfactants with natural and synthetic organic compounds

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PII: S0927-7757(15)30056-X
DOI: <http://dx.doi.org/doi:10.1016/j.colsurfa.2015.06.037>
Reference: COLSUA 19994

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 10-2-2015
Revised date: 18-6-2015
Accepted date: 19-6-2015

Please cite this article as: A.-V.Jung, C.Frochot, J.-L.Bersillon, Fluorescence spectroscopy as a specific tool for the interaction study of two surfactants with natural and synthetic organic compounds, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* <http://dx.doi.org/10.1016/j.colsurfa.2015.06.037>

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**Fluorescence spectroscopy as a specific tool for the interaction study of two surfactants
with natural and synthetic organic compounds**

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¹*Please find in the footnote the abbreviations used in the article*

Abstract

Four different techniques were used to study the binding of cationic cetyltrimethylammonium bromide (CTAB) and non-ionic nonylphenylethoxyl (NPE) surfactants to three synthetic organic components that mimic humic-like aggregates and to

¹A: area under the emission fluorescence curve for mixture of surfactants and organic materials

A₀: area under the emission fluorescence curve of organic material alone without surfactant

CG: catechol glycine synthetic organic compound

CMC: critical micellar concentration

CTAB: cetyltrimethylammonium bromide surfactant

CT1: catechol tri-glycine (1-3.5 kDa) synthetic organic compound

CT2: catechol tri-glycine (> 8 kDa) synthetic organic compound

DIS: derivative isotherms summation

FI: fluorescence intensity

HA: humic acid

HS: humic-like aggregate

n: refractive index of the media organic matter – surfactant solutions

n₀: refractive index of organic matter solutions

N1: natural humic compound collected during rainy period (autumn), extracted from suspended matters according to Thurman and Malcolm (1981)

N2: natural humic compound collected during drought period (summer), extracted from suspended matters according to Thurman and Malcolm (1981)

NOM: natural organic matter

NPE: non-ionic nonylphenylethoxyl surfactant

NTU: nephelometric turbidity unit

OD: optical density for mixture of surfactants and organic materials at the excitation wavelength selected for fluorescence emission measurements

OD₀: optical density for organic materials without surfactant at the excitation wavelength selected for fluorescence emission measurements

φ_f/φ₀: fluorescent quantum yield calculated for each surfactant and organic matter solution

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