



Self-Assembled Monolayers prepared from alkanethiols or dialkyl disulfides on Au: evidence of influence of the anchoring group

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Auteur	Blanchard, Pierre-Yves [1], Tsague Kenfack, Ghislain [2], Levillain, Eric [3], Gautier, Christelle [4]
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Mots-clés	Alkanethiol [5], Cyclic voltammetry [6], Dialkyl disulfide [7], Ferrocene [8], Self-assembled monolayers (SAMs) [9]
Résumé en anglais	Mainly based on electrochemical investigations, this work provides evidence of discrimination between self-assembled monolayers (SAMs) prepared from alkanethiols or symmetrical dialkyl disulfides on gold. Gravimetric experiments carried out by quartz crystal microbalance during the elaboration of ferrocene based SAMs (from alkanethiols FcC15SH and dialkyl disulfides FcC15SSC15Fc), showed significant differences between monolayers made from the two precursors. The recorded mass was almost 60 % more important with FcC15SH by comparison with FcC15SSC15Fc. The resulting cyclic voltammograms also highlighted a 60 % difference concerning the surface coverage of ferrocene heads. Moreover, dialkyl disulfide and thiol anchoring groups led to symmetrical and dissymmetrical peaks, respectively, suggesting not insignificant differences concerning interactions between adsorbed species into the two kinds of elaborated monolayers. These observations were confirmed on SAMs obtained from other precursors possessing shorter chain length or another functional moiety.
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Liens

[1] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=2508>

[2] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=25576>

[3] <http://okina.univ-angers.fr/eric.levillain/publications>

[4] <http://okina.univ-angers.fr/christelle.gautier/publications>

[5] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21786>

[6] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=4779>

[7] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21787>

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