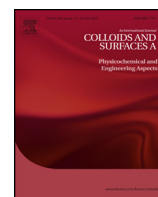




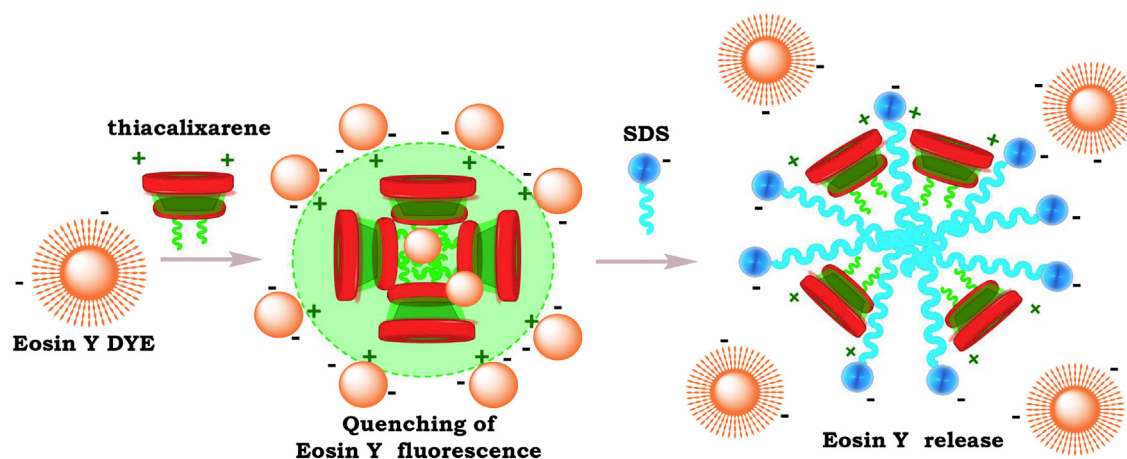
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## Colloids and Surfaces A: Physicochemical and Engineering Aspects

journal homepage: [www.elsevier.com/locate/colsurfa](http://www.elsevier.com/locate/colsurfa)Detection of sulfate surface-active substances *via* fluorescent response using new amphiphilic thiacalix[4]arenes bearing cationic headgroups with Eosin Y dyeV.A. Burirov<sup>a,\*</sup>, D.A. Mironova<sup>a</sup>, R.R. Ibragimova<sup>a</sup>, R.I. Nugmanov<sup>a</sup>, S.E. Solovieva<sup>a,b</sup>, I.S. Antipin<sup>a,b</sup><sup>a</sup> Kazan Federal University, 18 Kremlevskaya st. Kazan, 420008, Russian Federation<sup>b</sup> A.E. Arbuzov Institute of Organic & Physical Chemistry, 8 Arbuzov str., Kazan, 420088, Russian Federation

## G R A P H I C A L A B S T R A C T



## H I G H L I G H T S

- Synthesis of new *p*-*tert*-butylthiacalix[4]arene ammonium amphiphiles in *1,3*-*alternate* stereoisomeric form.
- Supramolecular associates of new *p*-*tert*-butylthiacalix[4]arene ammonium amphiphiles with Eosin Y dye.
- New fluorescent probe for sodium lauryl and laureth sulfates with response from 3.5  $\mu$ M of SAS.

## A R T I C L E I N F O

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## A B S T R A C T

New ammonium-containing derivatives of *p*-*tert*-butylthiacalix[4]arene in *1,3*-*alternate* stereoisomeric form were synthesized *via* copper-catalyzed azide-alkyne cycloaddition (CuAAC) reaction of corresponding azides with *N*-propargyl-*N,N,N*-triethylammonium bromide. Critical aggregation concentration (CAC) of new amphiphilic thiacalixarenes **1-3** (with butyl, octyl and tetradecyl substituents) determined by pyrene micellization method are 91, 59 and 33  $\mu$ M, respectively. According to DLS data the diameter of these aggregates is around 130 nm. Anionic dye Eosin Y (EY) forms the associates with positive charged thiacalixarenes **1-3**, shifts CAC to the low concentration region (2  $\mu$ M) and decreases nanoaggregates size up to 90 nm. Thiacalixarene/EY associates were investigated as fluorescent probe for the determination

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