Ain Shams University
Faculty of Science
Chemistry Department

New Photo analytical Methods for the assessment of some materials of industrial potential

A Thesis
Submitted for the Degree of Master of Science
As Partial Fulfillment for Requirements of Master of Science
"Chemistry Department"
By

Ahmed Tawfik Ahmed Sayed Ahmed Selim

B.Sc. in Zoology and Chemistry, Faculty of Science
Mansoura University
2005

Under Supervision of

Prof.Dr. Mohamed Said Attia

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To
Department of chemistry
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For
The degree
M.SC.in analytical chemistry

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Approval Sheet

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Highly sensitive Eu^{3+} doped in sol-gel matrix optical sensor for the assessment of Ciprofloxacin in different real samples

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Abstract

The efficiency of excited-state interaction between Eu^{3+} doped in sol- gel matrix and the industrial product ciprofloxacin of (CFX) has been studied in different solvent and pHs. A high luminescence intensity peak at 617 nm of europium- ciprofloxacin complex at λ_{ex}=365 nm in acetonitrile was obtained. The photophysical properties of the red emissive Eu^{3+} complex doped in sol-gel matrix have been elucidated, the europium was used as optical sensor for the assessment of ciprofloxacin in the pharmaceutical tablets and serum samples at pH 8.0 and λ_{ex} = 365 nm with a concentration range of 5.0 $\times 10^{-9}$ - 1.0 $\times 10^{-6}$mol L^{-1} for ciprofloxacin, correlation coefficient of 0.99 and detection limit of 1.65 $\times 10^{-9}$mol L^{-1}.

Keywords:

Photo probe (I) = **(4Z)-4-(1H**-Indol-3-ylmethylene)-2,5-diphenyl-2,4-dihydro-3H-pyrazol-3-one;Ciprofloxacin; Bis(dialkylamino)phenoxazinium;Europium(III);Enhancing; Luminescence; Optical sensor ; Sol-Gel ;

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In addition, I would like to thank ***my family.***

Aim of the work

Development and introduction of modern analytical techniques with high sensitivity and selectivity with low cost for assessment of 3-Nitrotyrosine in serum and assessment of zinc in semen sample to achieve this goal it's intended to

1) Study and characterization of two organic photo probesin which their emission affected by zinc and 3-nitrotyrosine

2) Study of the absorption and emission of the photo probes and the different factors affecting in their emission such as p^H, solvent.

3) Using optimum condition for assessment of zinc, Ciprofloxacin and 3-nitrotyrosinein different real samples.