

## Cu(II) recognition materials: fluorophores grafted on mesoporous silica supports.

### Autorzy

K. Kledzik  
Maja Orłowska  
D. Patralska  
M. Gwiazda  
Julia Jezierska  
S. Pikus  
R. Ostaszewski  
Andrzej M. Klonkowski

### Rok wydania

2007

### Czasopismo

Applied Surface Science

### Numer woluminu

254

### Strony

441-451

### DOI

10.1016/j.apsusc.2007.06.006

### Kolekcja

Naukowa

### Język

Angielski

### Typ publikacji

Artykuł

### Streszczenie

There were designed and synthesized naphthalene and pyrene derivatives consisting of fluorophore group and of receptor fragment with donor N and O atoms. These fluorosensors were covalently attached by grafting carboxyl group to surfaces of silica xerogel or mesoporous silicas (MCM-41 and MCM-48) functionalized either with 3-aminopropyl or 3-glycidopropyl groups. The pyrene derivatives **2** and **3** covalently grafted on MCM-48 silica functionalized with 3-aminopropyl groups are potential recognition elements of a fluorescence chemical sensor. Fluorescence emission of the prepared recognition materials is quenched specifically owing to photoinduced electron transfer (PET) effect after coordination reactions with Cu(II) ions. Moreover, both the materials exhibit selectivity for Cu(II) ions in aqueous solutions in presence of such metal ions as: alkali, alkaline earth and transition. During UV irradiation the studied recognition elements undergo slowly photochemical degradation.

### Słowa kluczowe

Mesoporous silica, Pyrene derivative, Fluorescence emission, Fluorophore, Recognition element

### Adres publiczny

<https://doi.org/10.1016/j.apsusc.2007.06.006>

### Strona internetowa wydawcy

<http://www.elsevier.com>

Plik został wygenerowany dnia 2026-10-13 11:37:33

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/vvgFKbW>.