

# Turkish Journal of Chemistry

Turkish Journal

of

Chemistry

## Inclusion and release of theophylline from chitosan based microparticles

Inclusion and release of theophylline from  
chitosan based microparticles

Niculina POPA<sup>1</sup>, Ovidiu NOVAC<sup>1</sup>, Lenuta  
PROFIRE<sup>2</sup>

Doina HRITCU<sup>1</sup>, Marcel Ionel POPA<sup>1</sup>

<sup>1</sup>Technical University Iasi, Faculty Chemical  
Engineering and Environmental Protection  
Bd D. Mangeron, 700050, Iasi-ROMANIA  
e-mail: mipopa@ch.tuiasi.ro

<sup>2</sup>University of Medicine and Pharmacy Gr.  
T. Popa, Universitatii 16  
700115, Iasi-ROMANIA

 [Keywords](#)

 [Authors](#)



[chem@tubitak.gov.tr](mailto:chem@tubitak.gov.tr)

[Scientific Journals  
Home Page](#)

**Abstract:** Chitosan (CS) based microparticles for controlled release of theophylline (THP) were obtained by ionic gelation. The microparticles were characterized by laser diffraction analysis (particle size), scanning electron microscopy (SEM), FTIR spectroscopy, and thermogravimetric analysis. The average diameter of the CS-THP microparticles was 182  $\mu$  m. The FTIR spectra confirmed that new hydrogen bonds had formed between the carbonylic group belonging to THP and the amino group of CS, while the thermogravimetric analysis showed a modified stability in the obtained particles and confirmed the presence of an interaction between the drug and CS. The