

Accepted Manuscript

Frontiers article

Synthesis, structural and NLO properties of the novel copper (I) *p*-toluenesulfonate π -complex with 1-allyloxybenzotriazole

Yu. Slyvka, A.A. Fedorchuk, E. Goreshnik, G. Lakshminarayana, I.V. Kityk, P. Czaja, M. Mys'kiv

PII: S0009-2614(18)30050-2
DOI: <https://doi.org/10.1016/j.cplett.2018.01.041>
Reference: CPLETT 35393

To appear in: *Chemical Physics Letters*

Received Date: 6 November 2017
Accepted Date: 22 January 2018

Please cite this article as: Yu. Slyvka, A.A. Fedorchuk, E. Goreshnik, G. Lakshminarayana, I.V. Kityk, P. Czaja, M. Mys'kiv, Synthesis, structural and NLO properties of the novel copper (I) *p*-toluenesulfonate π -complex with 1-allyloxybenzotriazole, *Chemical Physics Letters* (2018), doi: <https://doi.org/10.1016/j.cplett.2018.01.041>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Synthesis, structural and NLO properties of the novel copper (I) *p*-toluenesulfonate π -complex with 1-allyloxybenzotriazole

Yu. Slyvka^a, A.A. Fedorchuk^a, E. Goreshnik^b, G. Lakshminarayana^c, I.V. Kityk^{d,*}, P.Czaja^d
M. Mys'kiv^a

^aDepartment of Inorganic Chemistry, Ivan Franko National University of Lviv, Kyryla i Mefodiya Str., 6, 79005, Lviv, Ukraine

^bDepartment of Inorganic Chemistry and Technology, Jožef Stefan Institute, Jamova 39, SI-1000 Ljubljana, Slovenia

^cWireless and Photonic Networks Research Centre, Faculty of Engineering, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia

^dInstitute of Optoelectronics and Measuring Systems, Faculty of Electrical Engineering, Czestochowa University of Technology, 17 Armii Krajowej Str., 42-200 Czestochowa, Poland

Abstract

Using the alternating-current electrochemical technique, a novel π -complex $[\text{Cu}_2(\text{Alobtr})_2(\text{H}_2\text{O})_2](\text{CH}_3\text{C}_6\text{H}_4\text{SO}_3)_2$ (**1**) was obtained starting from copper(II) *p*-toluenesulfonate and the 1-allyloxybenzotriazole (*Alobtr*) ethanol solution. The structure **1** should be considered as the first known example of $\text{Cu}^{\text{I}}(p\text{-CH}_3\text{C}_6\text{H}_4\text{SO}_3)$ π -coordination compound. *Alobtr* molecule acts as a chelate π,σ -ligand (being attached to the Cu(I) by means of allylic C=C bond and the two triazole N atoms) and forms centrosymmetric $[\text{Cu}_2(\text{Alobtr})_2(\text{H}_2\text{O})_2]^{2+}$ dimers. Cationic fragments and *p*TsO⁻ anions are connected by means of (Ow)H...O hydrogen bonds into 1D chains. Laser stimulated third harmonic generation for fundamental wavelength 1540 nm is explored.

Keywords: copper(I); π -complex; 1,2,3-triazole derivatives; crystal structure; *ac*-electrochemical technique

*Corresponding author: E-mail: iwank74@gmail.com

Download English Version:

<https://daneshyari.com/en/article/7838151>

Download Persian Version:

<https://daneshyari.com/article/7838151>

[Daneshyari.com](https://daneshyari.com)