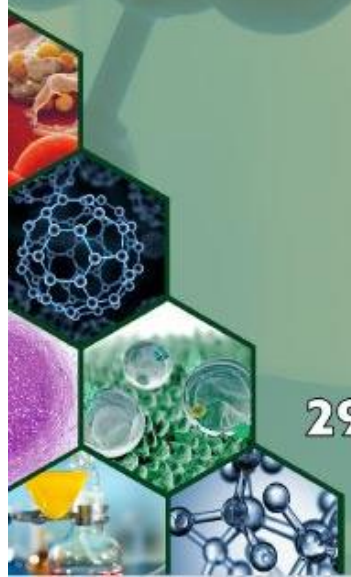
Serbian Chemical Society

Serbian Young Chemists' Club

Eight Conference

of the Young Chemists of Serbia

Book of Abstracts



Belgrade

29th OCTOBER 2022

8th Conference of Young Chemists of Serbia

Book of Abstracts

29th October 2022
University of Belgrade, Faculty of Chemistry

CIP – Категоризација у публикацији
Народна библиотека Србије, Београд

8th Conference of Young Chemists of Serbia
Belgrade, 29th October 2022
Book of Abstracts

Published and organized by
Serbian Chemical Society and Serbian Young Chemists' Club
Karnegijeva 4/III, 11000 Belgrade, Serbia
Tel./fax: +381 11 3370 467; www.shd.org.rs; office@shd.org.rs

Publisher
Dušan **SLADIĆ**, president of Serbian Chemical Society

Editors
Jelena **MILOVANOVIĆ**
Marko **RODIĆ**
Vuk **FILIPOVIĆ**
Života **SELAKOVIĆ**
Jelena **KESIĆ**
Mila **LAZOVIĆ**
Mihajlo **JAKANOVSKI**

Page Layout and Design
Vuk **FILIPOVIĆ**
Jelena **KESIĆ**
Mila **LAZOVIĆ**
Mihajlo **JAKANOVSKI**

Circulation
20 copies

ISBN **978-86-7132-080-1**

Printing
Development and Research Centre of Graphic Engineering
Faculty of Technology and Metallurgy, Karnegijeva 4, Belgrade, Serbia

Scientific Committee

Dr. Jelena Milovanović – University of Belgrade, Institute of molecular genetics and genetic engineering

Dr. Marko Rodić – University of Novi Sad, Faculty of Sciences

Dr. Vuk Filipović – University of Belgrade, Institute of Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia

Dr. Života Selaković – University of Belgrade, Faculty of Chemistry

Organizing Committee

Jelena Kesić – University of Novi Sad, Faculty of Sciences

Mila Lazović – Innovative Centre of the Faculty of Chemistry, Belgrade

Mihajlo Jakanovski – Innovative Centre of the Faculty of Chemistry, Belgrade

European Young Chemists' Network

Dr. Maximillian Menche, chair of the EYCN

Sponsorship

The organizing committee is grateful for the donations of the selected sponsor participants

European Young Chemists' Network

Analysis doo

Ministry of Education, Science and Technological Development, Republic of Serbia

Acknowledgement

Acknowledgement to the University of Belgrade, Faculty of Chemistry for the use of the space of the Faculty during the 8th Conference of Young Chemists' of Serbia.

Thanks to the Serbian chemical society for the supporting during organization of the Conference.

Deeply acknowledgments to the European Young Chemists' Network and European Chemical Society for the financial support of the best oral and poster presentations.

Thanks to the Analysis d.o.o. for support and the promoting material.

MS PP 07

Synthesis of new praseodymium doped phosphate tungsten bronze

Tijana V. Maksimović[1], Jelena P. Maksimović[2], Pavle I. Tančić[3], Maja C. Pagnacco[3]

[1] *University of Kragujevac, Faculty of Science, Kragujevac, Serbia*
[2] *University of Belgrade, Faculty of Physical Chemistry, Belgrade, Serbia*
[3] *University of Belgrade, Institute of Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia, Belgrade, Serbia*

For the preparation of praseodymium doped phosphate tungsten bronze (Pr-PWB), as a starting material is used 12-tungstophosphoric heteropoly acid $H_3PW_{12}O_{40}\times29H_2O$ (PWA) [1]. PWA was first converted into $H_3PW_{12}O_{40}\times6H_2O$ (6-PWA) by heating it to 80 °C in a kiln. The aqueous $PrCl_3\times H_2O$ solution was prepared by dissolving 0.7102 g of $PrCl_3\times H_2O$ in distilled water. This solution is then mixed with aqueous solution of 6-PWA, slightly heated in order to start the crystallization process and left overnight to finish the crystallization. The produced greenish crystals of praseodymium doped phosphate tungsten bronze are created by heating the obtained salt $PrPW_{12}O_{40}\times nH_2O$ in a furnace from room temperature to 600 °C. The conditions for thermal phase transformation of praseodymium salt of 12-tungstophosphoric heteropoly acid to produce new praseodymium phosphate tungsten bronze, have been investigated in the current work. The new material (Pr-PWB), synthesized from Keggin's anion structure as a precursor, is successfully formed. The potential practical application of Pr-PWB is in its installation in batteries and fuel cells, as a catalyst, and due to its specific green color it could also be used as a pigment.

References

1. Y. Kamiya, M. Sadakane, W. Ueda, *Comprehensive Inorganic Chemistry II (Second Edition): From Elements to Applications*. **2013**, *7*, 185.

Acknowledgments

Acknowledgment: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant No. 451-03-68/2022-14/200122, Grant No. 451-03-68/2022-14/200026).