



HRVATSKI SKUP KEMIČARA I KEMIJSKIH INŽENJERA

s međunarodnim sudjelovanjem | 4. simpozij "Vladimir Prelog"

9. – 12. travnja 2019. • Šibenik, Amadria Park (Solaris)

CROATIAN MEETING OF CHEMISTS AND CHEMICAL ENGINEERS

with international participation | 4<sup>th</sup> Symposium "Vladimir Prelog"

April 9–12, 2019 • Šibenik, Amadria Park (Solaris), Croatia

ORGANIZATORI / ORGANIZERS:

Hrvatsko društvo kemijskih inženjera i tehnologa  
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## Knjiga sažetaka

### *Book of Abstracts*

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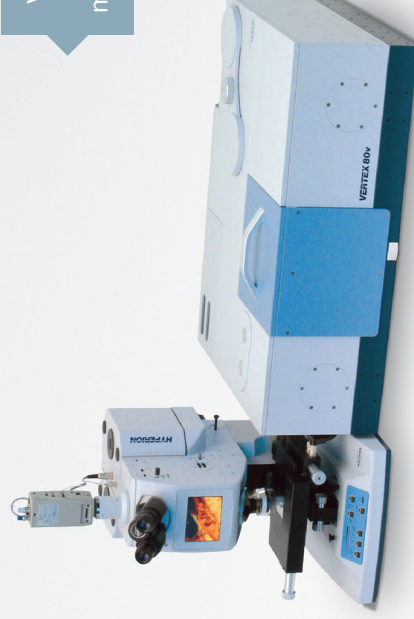


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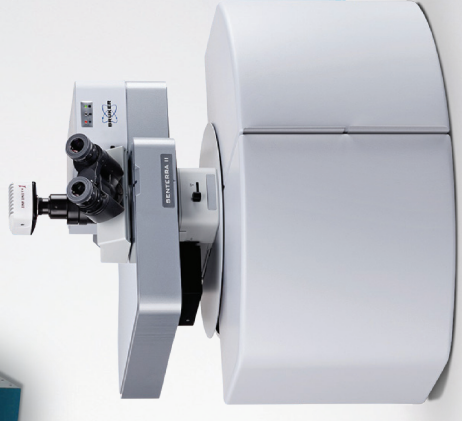
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26<sup>th</sup> Croatian Meeting of Chemists and Chemical Engineers  
with international participation  
4<sup>th</sup> Symposium Vladimir Prelog  
9–12 April 2019  
Šibenik, Amadria park (Solaris), Croatia

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Predsjednica Znanstveno-organizacijskog odbora

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**Uvodna riječ / Foreword**

U ime znanstveno-organizacijskog odbora iznimna mi je čast i zadovoljstvo pozdraviti Vas na **26. hrvatskom skupu kemičara i kemijskih inženjera (26HSKIKI)** s međunarodnim sudjelovanjem koji se održava od 9. do 12. travnja 2019. u Šibeniku, Amadria park (Solaris), u organizaciji Hrvatskoga društva kemijskih inženjera i tehnologa i Hrvatskoga kemijskoga društva. Skup se tradicionalno održava svake dvije godine od 1969. tako da se 2019. obilježava i jubilarnih 50 godina skupa. U sklopu Skupa svečano će se obilježiti i 100. obljetnica nastave kemijskog inženjerstva u Zagrebu, čiju tradiciju danas ponosno nosi Fakultet kemijskog inženjerstva i tehnologije Sveučilišta u Zagrebu. Na Skupu će se okupiti znanstvenici i stručnjaci sa sveučilišta, iz istraživačkih instituta, škola i industrije, kako iz Hrvatske tako i iz inozemstva, koji će kroz pet sekcija (Kemija, Kemijsko i biokemijsko inženjerstvo, Materijali, Zaštita okoliša i Obrazovanje) izmijeniti iskustva i prezentirati svoja najnovija dostignuća te na taj način proširiti nova znanja, ideje i tehnologije u službi inženjerstva i razvoja gospodarstva. Tijekom četiri radna dana, sudionici iz 20 zemalja održat će 6 plenarnih, 16 pozvanih te 30 sekcijских predavanja uz 177 posterskih priopćenja. Hvala pokroviteljima, sponzorima i izlagačima što su prepoznali važnost ovoga skupa te ga svojim sudjelovanjem podupiru. Želimo Vam ugodan boravak u Šibeniku uz mnoštvo razmijenjenih ideja, ostvarenih kontakata te bogatu znanstvenu i stručnu suradnju.

*On behalf of the Scientific and Organizing Committee, it is a great honour and privilege to welcome you to Šibenik, Amadria Park (Solaris) to the **26<sup>th</sup> Croatian Meeting of Chemists and Chemical Engineers (26HSKIKI)** with international participation, held from 9 – 12 April 2019. Jointly organized by the Croatian Society of Chemical Engineers and the Croatian Chemical Society, this meeting has traditionally been held on a biannual basis since 1969. This year, 2019, marks 50 years of our Meeting, on the occasion of which we are also celebrating a 100-year anniversary of chemical engineering teaching in Zagreb, a tradition proudly upheld by the Faculty of Chemical Engineering and Technology, University of Zagreb. Through its five sections – Chemistry, Chemical and Biochemical Engineering, Material Science, Environmental Protection and Education – this meeting aims to enable scientists and experts from universities, research institutes, schools and industry from Croatia and abroad to exchange experiences and present their recent achievements, thus introducing new knowledge, ideas and technologies into the fields of engineering and economic development. During four working days, the participants from 20 countries will hold 6 plenary lectures, 16 invited lectures and 30 section lectures as well as 177 poster presentations. We wish to thank our sponsors and exhibitors for recognizing the significance of this Meeting and for supporting it with their valued participation. We also wish you a pleasant stay in Šibenik and lots of benefits from a multitude of ideas exchanged, contacts made and successful scientific and expert collaboration established.*

**Aleksandra  
Sander**

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## Investigation of nanocrystalline tungsten- and tellurium-based triple perovskites

### Istraživanje nanokristalnih trostrukih perovskita na bazi volframa i telurija

Jelena Bijelić,<sup>1</sup> Anamarija Stanković,<sup>1</sup> Elvira Kovač-Andrić,<sup>1</sup> Berislav Marković,<sup>1</sup> Mirjana Bijelić,<sup>2</sup> Jasminka Popović,<sup>3</sup> Željko Skoko,<sup>2</sup> Goran Štefanić,<sup>3</sup> Zvonko Jagličić,<sup>4,5</sup> Pascal Cop,<sup>6</sup> Bernd Smarsly,<sup>6</sup> Georg Garnweitner,<sup>7</sup> Igor Djerdj<sup>1</sup>

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Specific structure of perovskite compounds provides them with various interesting properties which vary from magnetic and electric properties to magnetic frustration and half-metallicity. Because of their properties they can be found in numerous technological applications such as transducers, memory devices, solar cells, etc. [1-6].  $A_3B_2(W/Te)O_9$  (A=Sr, Ba; B=Fe, Co) triple perovskites have been prepared in nanocrystalline form using a modified sol-gel route with citric acid as a chelating agent. These materials have been studied by X-ray powder diffraction (PXRD), X-ray photoelectron spectroscopy (XPS), transmission electron microscopy (TEM), thermogravimetric analysis (TGA) and unpolarized Raman spectroscopy, while their magnetic properties have been determined using SQUID measurements. Similar research has already been done with tellurium- [7] and tungsten- [8] based perovskites. In this research the advances of solution chemistry methods (bottom up approach), namely sol-gel citrate route, over the solid state routes towards the synthesis of complex perovskite structures will be presented.

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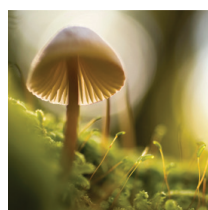
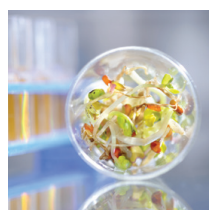
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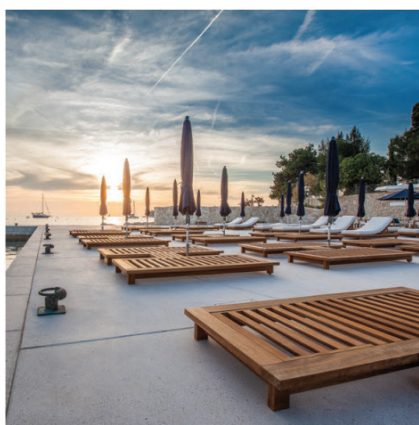
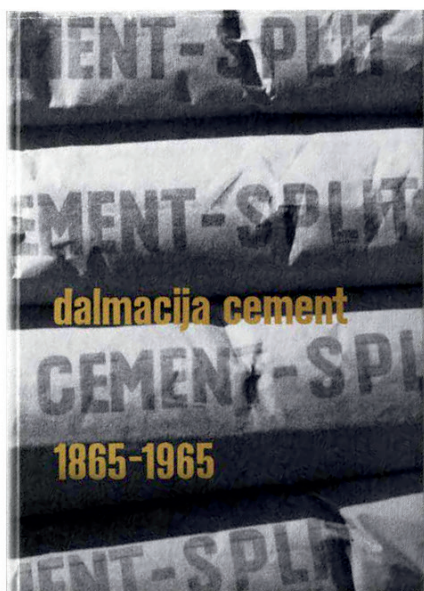
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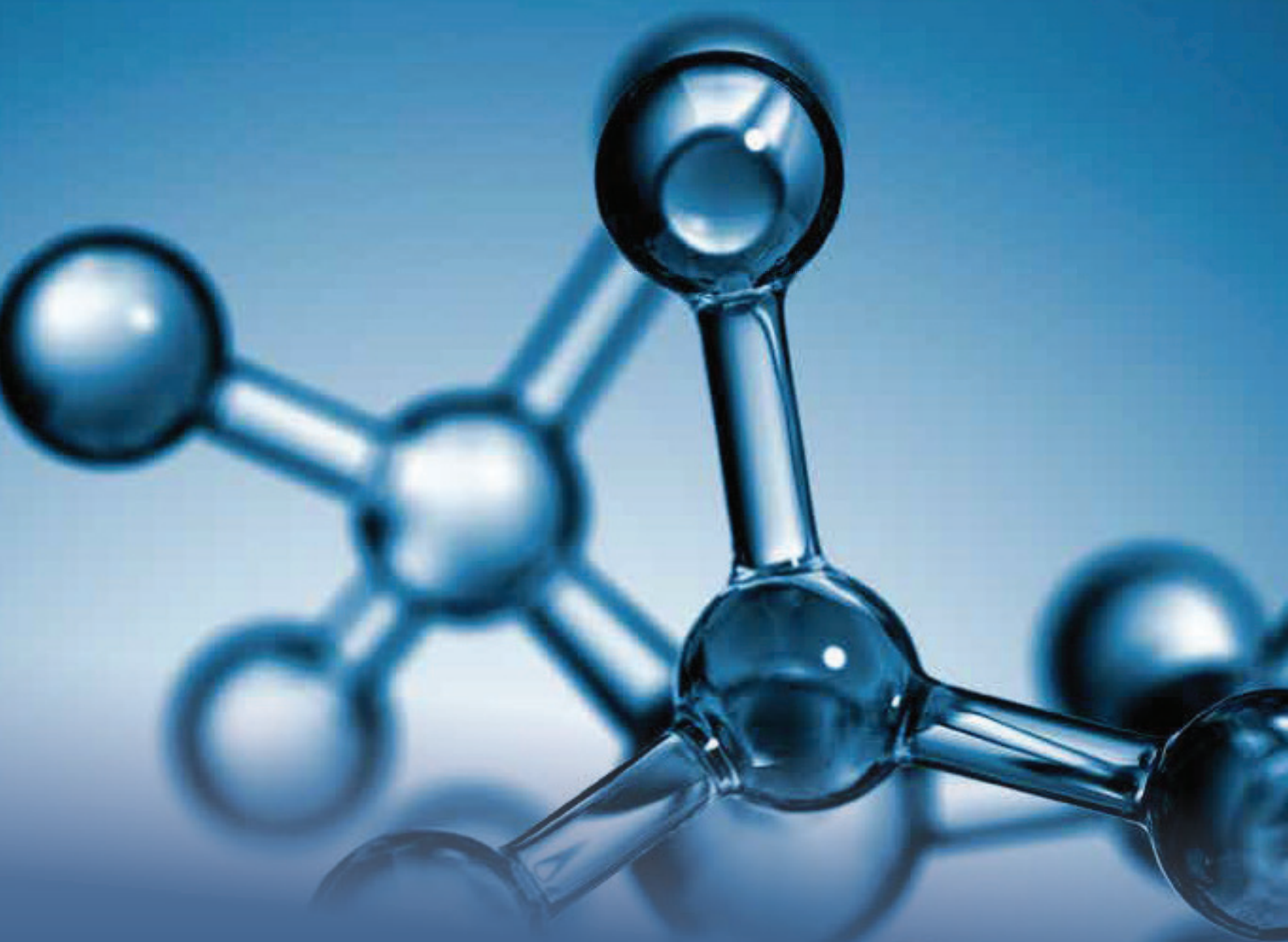
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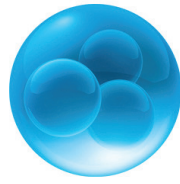


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**Xellia Pharmaceuticals** is a leading developer, manufacturer and supplier of life-saving anti-infectives. With over 100 years of industry experience in developing last resort treatments for infectious diseases, Xellia is focused on the supply of products which not only save lives, but also improve and enhance patients' quality of life. We are a specialty pharmaceutical company focused on fermented antibiotics and injectable finished products. Headquartered in Copenhagen, Denmark, and owned by Novo A/S, we are more than 1700 employees globally. From state-of-the-art manufacturing sites in the U.S, China, Denmark and Hungary to R&D sites in Norway and Croatia; Xellia Pharmaceuticals excels within innovative product development to deliver high quality products.



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