16th International Symposium on Applied Bioinorganic Chemistry (16-ISABC) 11-14th June University of Ioannina Greece

BOOK OF ABSTRACT

Sessions

- Metals in Medicine and Biology
- Metallomics, Metalloproteins Structures
- Metals Complexes Interaction with RNA, DNA or Proteins
- Bioinorganic Biomaterials
- Biomimetic and Bioinspired Bioinorganic Chemistry and Energy Conversion
- Metal Toxicology and Metals in Environment
- Biophysical, Biochemical and Spectroscopic Methods in Bioinorganic Chemistry

ISABC 16
11-14th June, Ioannina

under the Auspice of University of Ioannina, EuChemS, Association of Greek Chemists, Epirus Region and Municipality of Ioannina

The Chairman of the Organizing Committee
16th ISABC
Dr. Sotiris K Hadjikakou,
Professor
Department of Chemistry
University of Ioannina Greece

WELCOME MESSAGE

Dear participants,

I warmly welcome all of you to the 16th International Symposium on Applied Bio-inorganic Chemistry (ISABC) taking place in Ioannina. I am particularly happy to be here today. It is an important moment for our city and for the entire region of Epirus.

First, I would like to acknowledge the Region of Epirus, the Municipality of Ioannina, the European Chemical Society, and the Association of Greek Chemists for auspices this conference. Their contribution and support to this conference contributes to the advancement of science and research in the field of applied bio-inorganic chemistry, in general. Special note should be made to the support of the University of Ioannina and its rectory authorities. Especially, the support by the Rectors Professor Anna Batistatou and Professor Triantafyllos Albanis (former) in the successful organization of this meeting is acknowledge.

This conference marks a special moment as it is the first time we have met in person in this series of conferences since the end of pandemic. The ISABC-16 was initially expected to be held in June 2021, but due to pandemic was postponed for 2023. The COVID-19 pandemic has had a significant impact around the world, including the scientific community. However, with the progress of science and the dedication of scientists, we can say that biological chemistry and especially bio-inorganic chemistry have made a significant contribution to tackling this pandemic. Applied bio-inorganic chemistry was contributed in the battle against virus e.g with Innovated anti-viral coatings which prevent infectious diseases, with the development of new non-infection materials for protective face masks, innovated antiseptics etc

The ISABC conference has an impressive track record. It was first organized in Wuhan, China in 1990. The latest events were held in Nara, Japan by Professor Takashi Hayashi in 2019 and in Toulouse, France by Professors Peter Faller and Christelle Hureau in 2017. In 1999, Professor Nick Hadjiliadis, chaired the 5th meeting of the series in Corfu-Greece with a great success. It was precisely in Toulouse in 2017 when, accompanied by Emeritus Professor Nick Hadjiliadis and Dr Christina Banti, I presented our proposal to organize the ISABC-16 conference into Ioannina, in front of the International Organizing Committee. Since then, many years have passed, and the pandemic has put us in a challenging period of isolation and alienation.

Today, we return to Ioannina in a different world, a world where science has proven its resilience and ability to face challenges like pandemic. Here in Ioannina, we will have the opportunity to explore the latest developments in the field of applied bio-inorganic chemistry, exchange ideas and experiences, and demonstrate our ability to contribute to the advancement of science.

We are meeting again, in person, at the foot of Mount Tomaros, where the oldest oracle of Hellenism is located, the oracle of Dodona, which was dedicated to Jupiter-Zeus, the Father of Olympus Gods. As you will notice on the conference poster and the conference symbol contains the black Dove carrying an oak tree leaf from Thebes in Egypt, signalizing the area in which the oracle, would be built. According to ancient Greek mythology in Dodona was one of the holiest places in ancient Greece, a religious and political center of the Epirus in ancient times. It was known from the Homeric era and is mentioned by Herodotus as "the most ancient Greek oracle...".

Our distinguished guests, participants. It is a great honor for us to be here today, at this important event, and to have the opportunity to dedicate this meeting to the emeritus Professor Nick Hadjiliadis, who passed away recently. Professor Hadjiliadis has left his mark in the field of biological chemistry and especially bio-inorganic chemistry. With his work, he had made significant contributions to the scientific community and has inspired many young researchers to pursue this important field. He was known for his dedication to science and research, as well as his contribution to the development of the University of Ioannina.

Professor Hadjiliadis was also one of the pioneers of the International Symposium of Applied Bio-inorganic Chemistry. He hosted this conference in Corfu during 1999 and many others such as Eurasia 2012, HALCHEM-III etc.

I am, personally, grateful to Professor Hadjiliadis and his daily interest in the organization and progress of this conference until the last moments of his life, even during the pandemic. His absence here today fills me with sadness.

Today, as we meet here, we bring this conference back to Greece, in a different world emphasize our dedication in science and research for dealing with global challenges.

Let's open this new page and be inspired by the science and collaboration expected to emerge from this conference.

Thank you, very much and good start to you all!

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Sotiris K Hadjikakou
Professor
Chairman of the 16th ISABC

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Structural characterization and antitumor activity of platinum(II) complexes with phenothiazine and *N*-methylphenothiazine

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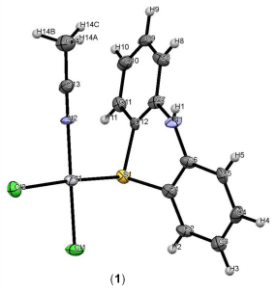
Cisplatin is one of the most used anticancer agents, and along with carboplatin and oxaliplatin, is a part of more than 50% of clinically applied anticancer regimens [1]. However, the side effects of cisplatin are severe and include dose-limiting toxicity, such as neurotoxicity, nephrotoxicity and ototoxicity. Platinum(II) complexes with different structure from cisplatin provide many opportunities for design of novel antitumor drugs with improved pharmacological properties. Considering this, in the present study, new platinum(II) complexes with phenothiazine (phtz) and *N*-methylphenothiazine (*N*-Mephtz), $[PtCl_2(phtz)(CH_3CN)]$ (**1**) and $[PtCl_2(N\text{-Mephtz})(CH_3CN)]$ (**2**), were synthesized. These complexes were characterized by elemental microanalysis, NMR (^1H and ^{13}C) and IR spectroscopic measurements, while the structure of complex **1** was determined by single-crystal X-ray diffraction analysis. The antitumor activity of the platinum(II) complexes was tested *in vitro* against a panel of human cancer cell lines, including A549 (lung cancer), A375 (melanoma, skin cancer), MDA-MB-231 (breast cancer), and HCT116 (colon cancer). To check the selectivity of the synthesized complexes **1** and **2**, a healthy MRC-5 cell line (lung fibroblasts) was also included in this study.



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