



# PHYSICAL CHEMISTRY 2022

16<sup>th</sup> International Conference  
on Fundamental and Applied Aspects of  
Physical Chemistry

Organized by  
The Society of Physical Chemists of Serbia

# BOOK OF ABSTRACTS



*Online Event*  
**September 26-30, 2022**  
**Belgrade, Serbia**

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*Abbreviations*

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- PL** – Plenary Lecture
- SL** – Section Lecture
- O** – Oral Presentation
- P** – Poster Presentation

**Topics**

- A** – Education and History
- B** – Spectroscopy, Molecular Structure, Physical Chemistry of Plasma
- C** – Kinetics, Catalysis
- D** – Nonlinear Dynamics, Oscillatory Reactions, Chaos
- E** – Electrochemistry
- F** – Biophysical Chemistry, EPR investigations of Bio-systems
- G** – Organic Physical Chemistry
- H** – Material Science
- I** – Photochemistry, Radiation Chemistry, Photonics
- J** – Macromolecular Physical Chemistry
- K** – Environmental Protection, Forensic Sciences, Geophysical Chemistry,  
Radiochemistry, Nuclear Chemistry
- L** – Phase Boundaries, Colloids, Liquid Crystals, Surface-Active Substances
- M** – Complex Compounds
- N** – Food Physical Chemistry
- O** – Pharmaceutical Physical Chemistry

**F-08-P**

**MODEST PROTECTIVE EFFECTS OF PROGESTERONE  
TREATMENT IN HIPPOCAMPUS OF MALE RATS SUBMITTED  
TO CEREBRAL HYPOPERFUSION**

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**ABSTRACT**

In the brain, three isoforms of nitric oxide synthase (NOS) regulate production of nitric oxide (NO), a signalling molecule with a role in cerebral blood flow regulation. Depending on the stimulus, NO exerts dual nature, from neuroprotective to neurodestructive. Given the scarcity of literature data on the involvement of nitrosative stress indicators in the rat hippocampal response to 7-day lasting progesterone (P4) treatment following permanent occlusion of both common carotid arteries, we assessed NO level and protein expressions of endothelial nitric oxide synthase (eNOS, including its total (t-eNOS) and phosphorylated at Ser<sup>1177</sup> isoform (p-eNOS Ser<sup>1177</sup>)). According to obtained results, elevated NO levels occurred due to activity of other NOS forms since eNOS expressions were similar between experimental groups. Although NO level was downscaled it was still elevated in occluded animals treated with P4, showing modest anti-nitrosative effect of this potent steroid in the hippocampus.