# *Curriculum Vitae* **Professor Jasmina Dimitrić Maković**

#### Address:

Faculty of Physical Chemistry University of Belgrade Studentski trg 12-16, 11000 Belgrade, Serbia Phone: + 3811 3336624 e-mail: markovich@ffh.bg.ac.rs

# Personal data:

- ▶ Born on March 9th 1965 in Belgrade, Republic of Serbia.
- ➢ Married, one child.

# Education:

- 1989 BSc in physical chemistry at Department of Physical Chemistry, Faculty of Chemistry, University of Belgrade.
- 1997 MSc in physical chemistry at Faculty of Physical Chemistry, University of Belgrade.
- ➤ 2001 PhD in physical chemistry at Faculty of Physical Chemistry, University of Belgrade.

# **Employment:**

- 1992-2001- Teaching assistant at Faculty of Physical Chemistry, University of Belgrade.
- 2002-2009 Assistant Professor at Faculty of Physical Chemistry, University of Belgrade.
- 2009-2014 Associate Professor at Faculty of Physical Chemistry, University of Belgrade.
- 2014 Full Professor at Faculty of Physical Chemistry, University of Belgrade.

# **Teaching:**

- Molecular spectroscopy
- ➢ Instrumetal analysis
- Basics of photoshemistry
- > Applied Photochemistry

#### **Research interests:**

- spectroscopic (UV-Vis, IR and Raman, EPR, MS) and theoretical characterization of different classes of polyphenols, catecholamines and their metabolites
- establishing structure-function relationship in natural polyphenols (predominantly flavonoids and phenolic acids), catecholamines and their metabolites
- providing quantitative tools to thoroughly and comprehensively characterize the antioxidant activity of plant polyphenols, catecholamines and their metabolites

- ➤ rationalizing the mechanisms of their action as antioxidants
- experimental and theoretical (using methods of DFT, NBO, QTAIM) testing of the antioxidant and antiradical activity of phenolics, catecholamines and their metabolites
- investigations that concern metal (Fe, Cu, ...) chelation as a mechanism of major importance when dealing with food antioxidants as free radical production is often catalyzed by metal ions
- a full understanding of metal-mediated reactions as crucial in establishing the balance between anti- and pro-oxidant effects in the human organism
- the conformational and dynamic changes in proteins (bovine and human serum albumin), occurring as a result of binding fluorophores (tested antioxidants) to protein matrix
- predicting the molecular conformations of small ligand molecules (antioxidants), that are crucial for the binding to proteins, by applying molecular docking method
- the investigation of the antimicrobial, antifungal and antiquorum activity of polyphenols, catecholamines, and their complexes

#### Scientific projects:

# National projects financed by Ministry of science of the Republic of Serbia:

- 1996-2000 project number 02E17
- ➤ 2000-2005 project number 1928
- ➤ 2006-2010 project number 142025
- ➤ 2011-2015 project number 172015

# International projects:

- "COST Action CM1304 Emergence and Evolution of Complex Chemical Systems". (2013-...)
- Serbia-France bilateral project ("Development of Theoretical Methodologies for Polyphenol Antioxidant Evaluation: Towards real-world applications") for the period 01.01.2013-31.12.2015.
- Serbia-Croatia bilateral project ("Investigations of the structure-activity relationships in polyphenols") for the period 01.01.2011-31.12.2012.

#### **Professional Society Memberships:**

- Serbian Chemical Society
- Society of Physical Chemists of Serbia

#### University textbooks:

- Jasmina Dimitrić Marković: Praktični aspekti odabranih poglavlja molekulske spektrohemije, Beograd 2008.(in Serbian, 300 pages) (Pratical aspects of selected chapters of molecular spectrochemistry - Belgrade, 2008)
- Jasmina Dimitrić Marković: "Fotohemija", Beograd 2014, (in Serbian, 280 pages) ("Photochemistry" Belgrade, 2015)

# Visitings abroad:

- May 1988- august 1988 BASF, Bundes Drepublic Deutschland, Analytical Laboratory
- November 1989-may 1990 BASF, Bundes Drepublic Deutschland, Analytical Laboratory
- My 2005-August 2005- Postrodoctoral Fellowship at the University of Florence, Italy

#### Selected, recently accepted and published, papers:

- Jasmina M. Dimitrić Marković, Boris Pejin, Dejan Milenković, Dragan Amić, Nebojša Begović, Miloš Mojović, Zoran S. Marković, Antiradical activity of delphinidin, pelargonidin and malvin towards hydroxyl and nitric oxide radicals: the energy requirements calculations as a prediction of the possible antiradical mechanisms, *Food Chem.* 218, 440-446, 2017.
- Ana Amić, Bono Lučić, Višnja Stepanić, Zoran Marković, Svetlana Marković, Jasmina M. Dimitrić Marković, Dragan Amić; Free radical scavenging potency of quercetin catecholic colonic metabolites: thermodynamics of 2H<sup>+</sup>/2e<sup>-</sup> processes, *Food Chem.* 218, 144-151, 2017.
- Svetlana Marković, Jelena Tošović, and Jasmina M. Dimitrić Marković, Synergic Application of Spectroscopic and Theoretical Methods to the Chlorogenic Acid Structure Elucidation, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 164, 67-75, 2016.
- Boris Pejin, Ana Ćirić, Jasmina Dimitrić Marković, Jasmina Glamočlija, Miloš Nikolić, Marina Soković: An insight into anti-biofilm and anti-quorum sensing activities of the selected anthocyanidins: the case study of Pseudomonas aeruginosa PAO1, Natural Product Research, DOI: 10.1080/14786419.2016.1222386.
- Ana Amić, Zoran Marković, Jasmina M. Dimitrić Marković, Bono Lučić, Višnja Stepanić, Dragan Amić; The 2H+/2e\_ free radical scavenging mechanisms of uric acid: thermodynamics of NAH bond cleavage, *Computational and Theoretical Chemistry*, 1077, 2-10, 2016.
- Zoran Marković, Svetlana Jeremić, Jasmina Dimitrić Marković, Marijana Stanojević Pirković, Dragan Amić; Influence of structural characteristics of substituents on the antioxidant activity of some anthraquinone derivatives, *Computational and Theoretical Chemistry*, 1077, 25-31, 2016.
- Zoran Marković, Jelena Đorović, Jasmina Dimitrić Marković, Radomir Biočanin<sup>1</sup>, Dragan Amić; Comparative density functional study of antioxidative activity of the hydroxybenzoic acids and their anions, *Turkish Journal of Chemistry*, 40, 499-509, 2016.
- Boris Pejin, Ana Ciric, Jasmina Dimitric Markovic, Jasmina Glamoclija, Milos Nikolic, Bojana Stanimirovic and Marina Sokovic; Quercetin Potently

Reduces Biofilm Formation of the Strain Pseudomonas aeruginosa PAO1 *in vitro, Current Pharmaceutical Biotechnology* 733-737, 2015.

- Miloš Filipović, Zoran Marković, Jelena Đorović, <u>Jasmina Dimitrić</u> <u>Marković</u>, Bono Lučić, Dragan Amić, QSAR of the free radical scavenging potency of selected hydroxybenzoic acids and simple phenolics, *Comptes rendus chimie* 18, 492-498, 2015.
- Ana Amić, Zoran Marković, Jasmina M. Dimitrić Marković, Višnja Stepanić, BonoLučić, Dragan Amić; Toward an improved prediction of the free radical scavenging potency of flavonoids: The significance of double PCET mechanisms, *Food Chem.* 152, 578-585, 2014.
- Jasmina M. Dimitrić Marković, Dragan Amić, Bono Lučić, Zoran S. Marković; Oxidation of kaempferol and its iron(III) complex by DPPH radical: spectroscopic and theoretical study, *Monatshefte fur Chemie Chemical Monthly*, 145, 557-563, 2014.
- Zoran Marković, Jelena Đorović, Jasmina M. Dimitrić Marković, Dragan Amić; Investigation of the radical scavenging potency of hydroxybenzoic acids and their carboxylate anions, *Monatshefte fur Chemie Chemical Monthly*, 145, 953-962, 2014.
- Jasmina M. Dimitrić Marković, Dejan Milenković, Dragan Amić, Miloš Mojović, Igor Pašti, Zoran S. Marković; The preffered radical scavenging mechanisms of fisetin and baicalein towards oxygen-centred radicals in polar, protic and aprotic, solvents, *RSC Advances*, 4, 32228-32236, 2014.
- Jelena Đorović, Zoran Marković, Jasmina M. Dimitrić Marković, Višnja Stepanić, Nebojša Begović, Dragan Amić; Influence of different free radicals on scavenging potency of gallic acid, J. Mol. Model. 20(7), 2345, 2014.
- Jasmina M. Dimitrić Marković, Dejan Milenković, Dragan Amić, Ana Popović-Bijelić, Miloš Mojović, Igor A. Pašti<sup>a</sup>, Zoran S. Marković' Energy requirements of the reactions of kaempferol and selected radical species in different media: towards the prediction of the possible antiradical mechanisms, *Structural Chemistry*, 25(6), 1795-1804, 2014.