

CURRICULUM VITAE: Dr. Damir Kralj (1959), Ruđer Boskovic Institute, Zagreb, Croatia

EDUCATION

1990 Ph. D. in Chemistry from the Ruđer Bošković Institute and the University of Zagreb (Lj. Brečević supervisor)

1986 M.Sc. in Physical and Analytical Chemistry, from the University of Zagreb (Lj. Brečević supervisor)

1983 B.Sc. in Chemical Technology (Engineering), from the University of Zagreb (C. Mažuranić supervisor)

CURRENT EMPLOYMENT AND DUTIES

2005 - Head of Laboratory for precipitation processes

2012 - Head of Division of Materials Chemistry

PREVIOUS WORK EXPERIENCE

1983 Assistant, Ruđer Bošković Institute, Laboratory for X-ray Diffraction

1984 Assistant, Ruđer Bošković Institute, Laboratory for Precipitation Processes

1986 Research assistant, Ruđer Bošković Institute, Laboratory for Precipitation Processes

1990 Senior research assistant, Ruđer Bošković Institute, Laboratory for Precipitation Processes

1999 Research associate, Ruđer Bošković Institute, Laboratory for Precipitation Processes

2003 Senior research associate, Ruđer Bošković Institute, Laboratory for Precipitation Processes

2010 Associate professor at University of Rijeka, Croatia

2012 Senior scientist

2018 Senior scientist, permanent position

FELLOWSHIPS, SCHOLARSHIPS, AND AWARDS

1989 Panum Institute, University of Copenhagen, Denmark

1991 - 1992 Laboratory for Process Equipment, Delft University of Technology, Delft, The Netherlands

1995 Ecole Europeenne des Hautes Etudes des Industries Chimiques de Strasbourg, Strasbourg, France (sabbatical)

1994 The Award of the Croatian Chemical Society for the colloid and interface chemistry

2005 The Award for VIKER - Multifunctional PC Controlled Bench Scale Chemical Reactor, Golden ARCA at THE 3rd ARCA – International Exhibition of Innovations, New Ideas, Product and Technologies, Zagreb, 2005

2005 The Award for VIKER - Multifunctional PC Controlled Bench Scale Chemical Reactor, GENIUS CUP- AWARD FROM THE ASSOCIATION OF HUNGARIAN INVENTORS at THE 3rd ARCA – International Exhibition of Innovations, New Ideas, Products and Technologies, Zagreb, 2005

2009 The Award for Procedure for preparation of precipitated calcium carbonate by semicontinuous process, Silver ARCA at The 7rd International Fair of inventions, new ideas, products and technologies, Zagreb, 2009

TEACHING AND SUPERVISION

Currently supervising 1 PhD students (N. Matijaković)

5 students completed PhDs (J. Kontrec, B. Njegić Džakula, M. Ukrainczyk, L. Štajner, A. Šter), 2 students completed diploma degrees (R. Vukoja and K. Kovač).

1998 - 2002 Assistant at the Physical chemistry course at the Faculty of Science, University of Zagreb

2014 - 2015 Doctoral Course at the University of Zagreb, Faculty of Science (*Lj. Brečević and D. Kralj: Equilibrium and kinetics of heterogeneous processes*)

2015 – 2019 Doctoral Course at the University of Zagreb, Faculty of Science (*D. Kralj: Equilibrium and kinetics of heterogeneous processes*).

2008 - 2013 Doctoral Course at the University of Zagreb, Faculty of Chemical Engineering and Technology (*D. Kralj: Precipitation processes in aqueous solutions*)

2015 - 2019 Doctoral Course at the University of Zagreb, Faculty of Chemical Engineering and Technology (*D. Kralj and J. Prlic Kardum: Crystallization*)

2009 - 2013 Undergraduate course at University of Rijeka, Department for Biotechnology (Precipitation and Crystallization)

2009 - 2013 Undergraduate course at University of Rijeka (Lecturer, Introduction to Bioinorganic Chemistry)

REVIEWER

Colloids and Surfaces A: Physicochemical and Engineering Aspects, Water Research, Industrial and Engineering Chemistry Research, Talanta, Kemija u Industriji, Croatica Chemica Acta, Langmuir, Materials Research Bulletin, Chemical Engineering Communications, Journal of Biomedical Materials Research, Part A, Environmental Science and Technology, Crystal Growth and Design, Crystal Research and Technology., etc.

PROFESSIONAL ACTIVITIES

1995 - 1998 Member of the Executive Committee and Secretary General of the Croatian Society of Natural Sciences
2003 - 2004 Member of the Executive Committee of the Croatian Chemical Society
2005 - 2009 Member of the Executive Committee and Secretary General of the Croatian Society of Chemical Engineers
2005 - 2009 Member of the Advisory board of the Director of the Rudjer Boskovic Institute
2006 - Member of the Editorial Board of the journal "Kemija u industriji"
2007 - Director of BioZyne d.o.o., RBI spin-off company
2009 - 2011 Member of the Advisory board of the Director of the Rudjer Boskovic Institute
2009 – 2013 Member of the Executive Committee of the Croatian Society of Natural Sciences
2008 – 2010 Member of the Committee for National innovation system, Government of the Republic of Croatia
2009 - Member of the Croatian Academy of Engineering, Department for Chemical Engineering
2017 – Member of the Committee for cooperation with industry of the Croatian Academy of Engineering
2017 – Member of the Committee for chemistry, Croatian Academy of Sciences and Arts
2011 - Croatian representative in the Council of European Network on Crystal Growth
2012 – 2016 Member of the Governing Board of the Ruđer Bošković Institute

SELECTED PROJECTS

2014 – 2018 Croatian Science Foundation, *Bioinspired Materials - Formation Mechanisms and Interactions* (Bio-Mat-Form) IP-2013-11-5055: Principal investigator **D. Kralj**
2006 - 2011: Scientific project supported by **MSES**, *Precipitation mechanism of inorganic biocompatible and related materials*, Principal Investigator **D. Kralj**
2005 - 2006: Scientific project supported by **Ministry of Science Education and Sport**, *Processes and interactions in heterogeneous solid/liquid systems*, Principal Investigator **D. Kralj**
2005 - 2007: Bilateral project Croatia - Slovenia, *The influence of magnetic field on calcium carbonate precipitation*, Principal investigator **D. Kralj**
2007: Scientific project supported by **Hrvatske vode d.d.**, *Fundamental research on kinetics and mechanism of calcium carbonate polymorphs precipitation in artificial karst water*, Principal investigator **D. Kralj**
2002 - 2007: Technological project supported by MSES: *Development of an Adaptable Procedure for the Preparation of Precipitated Calcium Carbonate (PCC)*, Principal investigator **D. Kralj**
2010 - 2014 Subcontract for analysis of the role of the soluble organic matrix from coral skeletons in the control of the kinetics of calcium carbonate deposition, **D. Kralj**, **FP7 IDEAS – ERC Advanced Grant**, Task 5.4, *Corals and global warming: The Mediterranean versus the Red Sea (CoralWarm)*;

DISSEMINATION RECORD

2012 Member of the International Advisory Board for the Fourth European Conference on Crystal Growth (ECCG4); University of Strathclyde, Glasgow, 17-20th June 2012
2015 Member of the scientific committee of 24th Croatian Meeting of Chemists and Chemical Engineers, Zagreb, April 21- 24th, 2015.
2015 Member of the scientific and organizing committee of the First Croatian Scientific and Industrial Meeting on Crystallization
2015 Member of the International Advisory Board for the Fifth European Conference on Crystal Growth (ECCG5); University of Bologna, 9 - 11th September, 2015
2015 Chair the session 6, "Mesocrystals and Nonclassical Crystallisation /Growth of Biological Materials and Biologically-Controlled Growth", Fifth European Conference on Crystal Growth (ECCG5); University of Bologna, 9 - 11th September, 2015

MAIN RESEARCH TOPICS

Mechanisms of precipitation of slightly soluble ionic salts (metastable and precursor phases)
Interfacial interactions: mineral surfaces / dissolved species (ions, molecules, macromolecules)
Biomineralization, industrial crystallization and geochemistry (calcium carbonates)
Environmental protection, pathological mineralization (magnesium ammonium phosphates, calcium oxalates)

COLLABORATIONS

Universita di Bologna, Dipartimento di Chimica G. Ciamician, Bologna, Italy, Prof. Giuseppe Falini (biomineralization)
Faculty of Agriculture, University of Zagreb, Department of Soil Amelioration, profs. D. Romić and M. Romić (geochemistry)
Rudjer Boskovic Institute, Division of Organic Chemistry and Biochemistry, Laboratory for Carbohydrate, Peptide and Glycopeptide Research (organic-inorganic hybrid materials, drug delivery)
Rudjer Boskovic Institute, Division for Physical chemistry, M. Dutour Sikirić, D. M. Smith (precipitation and modelling)