Curriculum Vitae

Personal information

Name in full:	Maja Dutour Sikirić
Date and place of birth:	9.5.1972., Zadar, Croatia
Office:	Laboratory for biocolloids and interface chemistry Division Of Physical Chemistry Ruđer Bošković Institute Bijenička c. 54, Zagreb, Croatia
Position	Senior Research Associate
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Education

1999 - 2002	Ph D student at Faculty of Science, University of Zagreb, Croatia
1995 - 1999	Masters student at Faculty of Science, University of Zagreb, Croatia
1990 - 1994	Undergraduate student at Faculty of Science, University of Zagreb, Croatia

Diplomas and/or tittle

2002	Ph. D. in Chemistry *The influence of spacer on physico-chemical properties of dissymmetric dimeric surfactants* Defended at Faculty of Science, University of Zagreb, Croatia Thesis advisors: prof. N. Filipović-Vinceković and prof. Đ. Težak
1999	M. Sc. in Chemistry *Precipitation of urinary stones mineral salts* Defended at Faculty of Science, University of Zagreb, Croatia Thesis advisors: V. Babić-Ivančić, associate professor and prof. S. Musić
1994	B. Sc. in Chemistry *Crystal and molecular structure of bis[4-(quinolylmethylene-amino-2,3-dimethyl-1-phenily-5-pyrazolone]copper(I) perchlorate dihydrate* Defended at Faculty of Science, University of Zagreb, Croatia Thesis advisor: A. Hergold-Brundić, assistant professor

Professional career

2016 -	*Senior Research Associate* Head of Laboratory for biocolloids and interface chemistry, Ruđer Bošković Institute
2014-2016	*Senior Research Associate* Head of Laboratory for synthesis and processes of selfassembling of organic molecules, Ruđer Bošković Institute
2012 -	*Assistant Professor* Department of Biology, university of Osijek

2010 -2016.	*Senior Research Associate* Laboratory for synthesis and processes of selfassembling of organic molecules, Ruđer Bošković Institute
2003 - 2010	*Research Associate* Laboratory of Radiochemistry (from 2009 Laboratory for synthesis and processes of selfassembling of organic molecules), Ruđer Bošković Institute
2003 - 2004	*Postdoc* Valazzi-Pikovsky Fellowship, Casali Institute for Applied Chemistry, Graduate School of Applied Science, The Hebrew University of Jerusalem, Jerusalem, Israel
2002 - 2003	*Postdoc* Casali Institute for Applied Chemistry, Graduate School of Applied Science, The Hebrew University of Jerusalem, Jerusalem, Israel
2002 - 2003	*Senior Assistant* Laboratory of Radiochemistry, Ruđer Bošković Institute
1999 - 2002	*Assistant* Laboratory of Radiochemistry, Ruđer Bošković Institute
1996 - 1999	*Junior Assistant* Department of Animal Nutrition, Faculty of Agriculture,University of Zagreb
1995 - 1996	Laboratory for Precipitation Processes, Ruđer Bošković Institute

Project or project team leadership

2018 - 2022	"*Mechanisms of calcium phosphates formation on inorganic nanomaterials. A biomimetic synthetic route for multifunctional nanocomposites for hard tissue regeneration*" Croatian Science Foundation, PI
2015 – 2018	"*European and Latin American Technology based Business network*" EuropaAid, Croatian team leader
2014- 2016	"Development of calcium phosphate bioceramics for hard tissue regeneration by biomimicking biomineralization processes in crustaceans", Croatian – Slovenian bilateral project, MZOŠ
2012 -2013	"*Multifunctional composite coating for bone implants*" Business Innovation Croatian Agency, BICRO, Proof of Concept, PI
2010 -2014	"*Surface active agents, processes in solution and at the interfaces*" Croatian Ministry of Science project (PI 2007 - 2010 dr. Nada Filipović-Vinceković)
2010 - 2011	"*Synthesis of amorphous calcium phosphate by ultrasonic spray pirolysis*" Croatian - Serbian bilateral project, PI (PI February - November 2010 dr. Nada Filipović-Vinceković)
2007 - 2009	*INCOMAT Creating international cooperation teams of excellence in the field of emerging biomaterial surface research*" FP6 SSA Leader of Croatian team and Team of Excellence 2 Bioactive and biomimetic coatings for enhanced bone contact

Research interests

- ✓ crystallization of biologically relevant minerals (calcium oxalates and phosphates)
- ✓ design of biomimetic organic-inorganic composite bone and dental implants
- ✓ dynamic light scattering characterization of nanomaterials
- ✓ solution and solid state properties of gemini surfactants
- ✓ animal products and feed quality
- ✓ influence of animal nutrition on the environment

Professional activities

- ✓ Referee for ACS Nano, Langmuir, Journal of Environmental Management, Journal of Colloid and Interface Science, Journal of Materials Chemistry B, Crystal Research and Technology, Journal of Crystal Growth, RSC Advances, Mljekarstvo,
- ✓ Member of Croatian Chemical Society, Croatian Biometric Society, Croatian electron microscopy Society,
- ✓ Croatian Metrology Society.
- ✓ Member of Advance Chemistry Letters Editorial Board

Teaching activities

2011 -	lecturer of *The fundamentals of physical chemistry I and II* Graduate programm in biology education University of Osijek
2006 -	co-lecturer of *Physico-chemical processes in pathological biomineralization* Ph D study "Molecular biosciences" "Ruđer Bošković" Institute, University of Osijek, University of Dubrovnik
2005 -	co-lecturer of *Chemistry and quality control of animal feed* Postgraduation study "Nutrition and animal feed" Faculty of Agriculture, University of Zagreb
2005 -	co-lecturer of *Physico-chemical processes in the environment* Postgraduation interdisciplinary study "Environmental protection" University of Osijek, "Ruđer Bošković" Institute

Additional education

2004 - 2005	statistical and SAS courses organized by University Computing Center SRCE
1998 - 2001	laboratory accreditation courses organized by State Office for Normization and Metrology and Croatian Metrology Society
1998 - 1999	applied agricultural research courses organized by Agricultural Research Council, Ministry of Agriculture

Languages

Mother tongue:	Croatian
Very good knowledge:	English, Russian, Italian
Good knowledge:	French, Hebrew

Commissions, Committees, Boards and Work groups

2014-	Member of Scientific Council of Ruđer Bošković Institute
2014-	Member of Economic Council of Ruđer Bošković Institute
2010-2014	President of Technical Subcommittee"Management systems for food safety", Croatian Standards Institute
1997 -	Member of Technical Subcommittee"Animal feedingstuffs", Croatian Standards Institute

Publications

- ✓ co-author of 48 papers in WoS CC journals, 1 patent and 2 chapters in the book

WoS CC papers:

1. M. Sikirić, V. Babić-Ivančić, M. Tonković, Precipitation of calcium oxlate and calcium phosphate in the presence of uric acid, Colloids and Surfaces, A: Physicochemical and Engineering Aspects 121 (1997) 145-150.
2. A. Tucak, V. Šerić, D. Kozmar, M. Sikirić, I. Zorić, V. babić-Ivančić, Correlationof urine metabolic factors and urinary stones composition, Periodicu Biologorum 101 (1999) 35-44
3. M. Sikirić, N. Filipović-Vinceković, V. Babić-Ivančić, N. Vdović, H. Füredi-Milhofer, Interactions in calcium oxalate hydrate/surfactant systems, Journal of Colloid and Interface Science 212 (1999) 384-389.
4. M. Sikirić, V. Babić-Ivančić, O. Milat, S. Sarig, H. Füredi-Milhofer, Engineering crystal growth of calcium hydrogenphosphate dihydrate, Key Engineering Materials 192-1 (2000) 11-14
5. M. Tonković, M. Sikirić, V. Babić-Ivančić, Controversy about beta-tricalcium phosphate,Colloids and Surfaces, A: Physicochemical and Engineering Aspects 170 (2000) 107-112.
6. L. Horvath, M.Sikirić, N. Filipović-Vinceković, Effect of cationic surfactant on the transformation of octacalcium phosphate, Journal of Crystal Growth 219 (2000) 91-97.
7. M. Sikirić, V. Babić-Ivančić, O. Milat, S. Sarig, H. Füredi-Milhofer, Factors influencing additive interactions with calcium hydrogenphosphate dihydrate crystals, Langmuir 16 (2000) 9261-9266.
8. M. Bujan, M. Sikirić, N. Filipović- Vinceković, N. Vdović, N. Garti, H. Füredi-Milhofer, Effect of anionic surfactants on crystal growth of calcium hydrogenphosphate dihydrate crystals, Langmuir 17 (2001) 6461-6470.
9. H. Füredi-Milhofer, M. Sikirić, L. Tunik, N. Filipović- Vinceković, N. Garti, Interactions of organic additives with ionic crystal hydrates: The importance of the hydrated layer, International Journal of Modern Physics B 16 (2002) 359-366.
10. M. Sikirić, I. Primožič, N. Filipović-Vinceković, Adsorption and Association in Aqueous Solutions of Dissymmetric Gemini Surfactant, Journal of Colloid and Interface Science 250 (2002) 221-229.
11. M. Sikirić, N. Brajenović, I. Pavlović, J.L. Havranek, N. Plavljanić, Determination of finsin cow's milk by flame atomic absorption spectrophotometry, Czech Journal of Animal Science 48 (2003) 481-486.
12. M. Sikirić, I. Šmit, Lj. Tušek-Božić, V. Tomašić, I. Pucić, I. Primožič, N. Filipović-Vinceković,Effect of the Spacer Length on the solid phase transitions of dissymmetric gemini surfactants, Langmuir 19 (2003) 10044-10053
13. H. Füredi-Milhofer, P.B.Y. Ofir, M. Sikirić, L. Tunik, N. Garti, Control of calcium phosphate crystal nucleation, growth and morphology by polyelectrolytes, Key Engineering Materials 254-2 (2004) 11-14
14. I. Pavlović, M. Sikirić, J.L. Havranek, N. Plavljanić, N. Brajenović, Lead and cadmium levels in raw in cow's milk from an industrialized Croatian region determined by electrothermal atomic absorption spectrophotometry, Czech Journal of Animal Science 49 (2004) 164-168
15. J. Pintar, B. Homen, K. Gazić, D. Grbeša, M. Sikirić, T. Černy, Effects of supplemental phytase on performance and tibia ash of broilers fed different cereals based diets, Czech Journal of Animal Science 49 (2004) 542-548.
16. J. Pintar, B. Homen, K. Gazić, Z. Janječić, M. Sikirić, T. Černy, Effects of supplemental phytase on the nutrient excretion and retention of broilers fed different cereal based diets, Czech Journal of Animal Science, 50 (2005) 40-46.
17. M. Sikirić, I. Primožič, Y. Talmon, N. Filipović-Vinceković, Effect of the spacer length on the association and adsorption behavior of dissymmetric gemini surfactants, Journal of Colloid and Interface Science 281 (2005) 473-481

18. J. Pintar, M. Bujan, B. Homen, K. Gazić, M. Sikirić, T. Černy, Effects of supplemental phytase on the mineral content in tibia of broilers fed different cereal based diets, Czech Journal of Animal Science, 50 (2005) 68-73.
19. M. Dutour Sikirić, H. Füredi-Milhofer, The influence of surface active molecules on the crystallization of biominerals in solution, Advances in Colloid and Interface Science, 128 (2006) 135-158
20. M. Dutour Sikirić, R. Elkaim, S. Lamolle, H.J. Ronold, S.P. Lyngstadass, H. Füredi-Milhofer, F.J.G. Cuisinier, Biomimetic organic-inorganic nanocomposite coatings for titanium implants. II. Biological „in vitro“ and „in vivo“ characterization, Key Engineering Materials 330-332 (2007) 401-404
21. M. Dutour Sikirić, C. Gergely, F.J.G. Cuisinier, H. Füredi-Milhofer, Biomimetic organic-inorganic nanocomposite coatings for titanium implants: I. Preparation, physicochernical and mechanical characterization, Key Engineering Materials 330-332 (2007) 389-493
22. M.Brgles, D. Jurašin, M. Dutour Sikirić, R. Frkanec, J. Tomašić, Entrapment of Ovalbumin into liposomes – Factors affecting entrapment efficiency, liposome size, and zeta potential, Journal of Liposome Research, 18 (2008) 235-248
23. M. Vinceković, M. Bujan, I. Šmit, Lj. Tušek-Božić, D. Tsiourvas, M. Dutour Sikirić, Influence of dodecylammonium chloride on the properties of carrageenan gels, Journal of Dispersion Science & Technology, 29 (2008):966-974.
24. M. Dutour Sikirić, C. Gergely, R. Elkaim, E. Wachtel, F.J.G. Cuisinier, H. Füredi-Milhofer,Biomimetic organic-inorganic nanocomposite coatings for titanium implants, Journal of Biomedical Materials Research Part A, 89A (2009) 759-771.
25. V. Babić-Ivančić, M. Jendric, N. Šoštarić, T. Opačak-Bernardi, S. Tucak Zorić, M. Dutour Sikirić, Influence of pH, Temperature and Common Ion on Magnesium Hydrogenurate Octahydrate Solubility, Collegium Antropologicum 34 (2010) Suppl. 1 259-266.
26. V. Šerić, M. Dutour Sikirić, I. Mihaljević, S. Tucak Zorić, I. Bilić-Ćurčić, V. Babić-Ivančić, Metabolic and physico-chemical urolithiasis parameters in the first morning urine, Collegium Antropologicum 33 (2009) Suppl. 2 85-92.
27. R. Schade, M. Dutour Sikirić, S. Lamolle, H.J. Ronold, S.P. Lyngstadass, K. Liefeith, F.J.G. Cuisinier, H. Füredi-Milhofer, Biomimetic organic-inorganic nanocomposite coatings for titanium implants. In vitro and in vivo biological testing, Journal of Biomedical Materials Research Part A, 95A (2010) 691-700.
28. M. Vinceković, M. Bujan, M. Dutour Sikirić, Nano and Microcomplexes of Biopolymers and Surfactants, Journal of polymer engineering, 31 (2011) 115-123
29. N. Ren, B. Subotić, J. Bronić, Y. Tang, M. Dutour Sikirić, T. Mišić, V. Svetličić, S. Bosnar, T. Antonić Jelić, Unusual Pathway of Crystallization of Zeolite ZSM-5 in a Heterogeneous System: Phenomenology and Starting Considerations, Chemistry of Materials, 24 (2012) 1726-1737
30. A. Štimac, S. Šegota, M. Dutour Sikirić, R. Ribić, L. Frkanec, V. Svetličić, S. Tomić, B. Vranešić, R. Frkanec, Surface modified liposomes by mannosylated conjugates anchored via theadamantyl moiety in the lipid bilayer, Biochimica et Biophysica Acta Biomembranes, 1818 (2012) 2252-2259
31. I. Matković, N. Malatar-Strmečki, V. Babić-Ivančić, M. Dutour Sikirić, V. Noethig-Laslo, Characterisation of β-tricalcium phosphate-based bone substitute materials by electron paramagnetic resonance spectroscopy, Radiation Physics and Chemistry, 81 (2012) 1621-1628
32. V. Jokanović, B. Čolović, M. Dutour Sikirić, V. Trajković, A new approach to the drug release kinetics of a discrete system: SiO_2 system obtained by ultrasonic dry spraying, Ultrasonic Sonochemistry, 20 (2013) 535-545
33. N. Ren, J. Bronić, S. Bosnar, M. Dutour Sikirić, T. Antonić Jelić, J-J. Mao, B. Subotić, The relationship between sub-micrometer sized ZSM-5, slice-like (lamellar) keatite and hollow α-quartz particles: a phase transformation study, CrystEnGComm, 15 (2013) 5032-5044.

34. D. Domazet Jurašin, M. Dutour Sikirić, Higher Oligomeric Surfactants – From Fundamentals to Applications U: C. Lesieur ur., Oligomerization of Chemical and Biological compounds, Intech, Rijeka, 2014, 133-172
35. N. Ren, S. Bosnar, J. Bronić, M. Dutour Sikirić, T. Mišić, V. Svetličić, J-J. Mao, T. Antonić Jelić, M. Hadžija, B. Subotić, Role of Subcolloidal (Nanosized) Precursor Species in the Early Stage of the Crystallization of Zeolites in Heterogeneous Systems, Langmuir, 30 (2014) 8570-8579.
36. A. Selmani, I. Coha, K. Magdić, B. Čolović, V. Jokanović, S. Šegota, S. Gajović, A. Gajović, D. Jurašin, M. Dutour Sikirić, Multiscale study of the cationic surfactants influence on amorphous calcium phosphate precipitation, CrystEngComm, 17 (2015) 8529-8548
37. P. Burić, Ž. Jakšić, L. Štajner, M. Dutour Sikirić, D. Jurašin, C. Cascio, L. Calzolai, D.M. Lyons, Effect of silver nanoparticles on Mediterranean sea urchin embryonal development is species specific and depends on moment of first exposure, Marine Environmental Research 111 (2015) 50-59
38. F. Stipić, P. Burić, Ž. Jakšić, G. Pletikapić, M. Dutour Sikirić, G. Zgrablić, L. Frkanec, D.M. Lyons, Antibody-based donor -acceptor spatial reconfiguration in decorated lanthanide-doped nanoparticle colloids for the quantification of okadaic acid biotoxin, Colloids and surfaces B:Biointerfaces, 135 (2015) 481-489
39. I. Vinković Vrček, I. Žuntar, R. Petlevski, I. Pavičić, M. Dutour Sikirić, M. Ćurlin, W. Goessler, Comparison fin *vitro* toxicity of silver ions and silver nanoparticles on human hepatoma cells, Environmental toxicology, 31 (2016) 679-692
40. M. Levak, P. Burić, D. Domazet Jurašin, N. Mikac, N. Bačić, R. Drexel, F. Meier, Ž. Jakšić, D.M. Lyons, Effect of protein corona on silver nanoparticle stabilization and ion release kinetics in artificial seawater, Environ. Sci. Technol. 51 (2017) 1259-1266
41. I. Buljan Meić, J. Kontrec, D. Domazet Jurašin, B. Njegić Džakula, L. Štajner, D.M. Lyons, M. Dutour Sikirić, D. Kralj, Comparative study of calcium carbonates and calcium phosphates precipitation in model systems mimicking the inorganic environment for biomineralization, Crystal growth & design, 17 (2017) 1103-1117
42. I. Buljan Meić, J. Kontrec, D. Domazet Jurašin, A. Selmani, B. Njegić Džakula, N. Maltar-Strmečki, D. M. Lyons, M. Plodinec, M. Čeh, A. Gajović, M. Dutour Sikirić, D. Kralj, How similar are amorphous calcium carbonate and calcium phosphate?A comparative study of amorphous phases formation conditions, CrystEngComm, 20 (2018) 35 – 50
43. S. Bosnar, T.A. Jelić, J. Bronić, M. Dutour Sikirć, S- Šegota, V. Čadež, V. Smrečki, A. Palčić, B. Subotić, Deep Insights into the Processes Occurring during Early Stages of the Formation and Room-Temperature Evolution of the Core (Amorphous SiO_2)@Shell (Organocations) Nanoparticles J. Phys. Chem. C, 122 (2018) 9441-9454
44. V. Čadež, I. Erceg, A.Selmani, D. Domazet Jurašin, S. Šegota, D.M. Lyons, D. Kralj, M. Dutour Sikirić, Amorphous Calcium Phosphate Formation and Aggregation Process Revealed by Light Scattering Techniques, Crystals, 8 (2018), doi: 10.3390/cryst8060254
45. V. Čadež, S. Šegota, I. Sondi, D.M. Lyons, P. Saha, N. Saha, M. Dutour Sikirić, Calcium phosphate and calcium carbonate mineralization of bioinspired hydrogels based on beta-chitin isolated from biomineral of the common cuttlefish (Sepia officinalis, L.), J. Polymer Res., 25 (2018), doi: 10.1007/s10965-018-1626-z
46. I. Capjak, M.Z. Avdičević, M. Dutour Sikirić, D. Domazet Jurašin, A. Hozić, D. Pajić, S. Dobrović, W. Goessler, I. Vinković Vrček, Behavior of silver nanoparticles in wastewater: systematic investigation on the combined effects of surfactants and electrolytes in model systems, Environ. Sci. Water Res. Technol., 12 (2018) 2146-2159, doi: 10.1039/c8ew00317c
47. N. Saha, R. Shah, P. Gupta, B.B. Mandal, R. Alexandrova, M. Dutour Sikirić, P. Saha, PVP - CMC hydrogel: An excellent bioinspired and biocompatible scaffold for osseointegration, Mater. Sci. Eng. C Mater. Biol. App. 95 (2019) 440-449, doi: 10.1016/j.msec.2018.04.050
48. M. Varga, J. Horvatić, L. Barišić, Z. Lončarić, Physiological and biochemical effect of silver on the aquatic plant Lemna gibba L.: Evaluation of commercially available product containing colloidal silver, Aquatic Toxicology, 2017 (2019) 52-62, doi: 10.1016/j.aquatox.2018.11.018

Chapters in the books:

1. D. Jurašin and M. Dutour Sikirić (2014): Higher Oligomeric Surfactants — From Fundamentals to Applications, Oligomerization of Chemical and Biological Compounds, Dr. Claire Lesieur (Ed.), ISBN: 978-953-51-1617-2, InTech, DOI: 10.5772/57655.
2. Darija Domazet Jurašin, Suzana Šegota, Vida Čadež, Atiđa Selmaniand Maja Dutour Sikirć (2017). Recent Advances in Catanionic Mixtures, Application and Characterization of Surfactants, Dr. Reza Najjar (Ed.), InTech, DOI: 10.5772/67998. Available from: https://www.intechopen.com/books/application-and-characterization-of-surfactants/recent-advances-in-catanionic-mixtures

Patents:

H. Füredi-Milhofer, P. Bar-Yosef, M. Sikirić, F. Cuisinier, C. Gergely, *Organic-inorganic nanocomposite coatings for biological implant materials and methods of preparation thereof,* 10.06.2004. WO 2004/047880 A1, 28.9.2006. US Patent 20060216494 A1