

Languages: Croatian, English, French, German
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WORK EXPERIENCE:

- 2016- Associate professor at University of Rijeka, Department of Biotechnology
- 2015-2016 Associate professor at Josip Juraj Strossmayer University of Osijek, Department of Chemistry
- 2012-2014 Research associate, Faculté des Sciences Pharmaceutique et Biologique, Université Paris Descartes, Sorbonne Paris Cité, Laboratoire de Pharmacognosie -UMR CNRS 8638.
- 2010-2012 Visiting professor, Department of Biotechnology, University of Rijeka, Croatia
- 2008-2011 Scientific collaborator, Swiss National Science Foundation in Laboratory of Glycochemistry and Asymmetric Synthesis, Prof. Pierre Vogel, EPFL
- 2006-2008 Post-doctoral research fellow at Yale University, New Haven, Connecticut, USA and University of Illinois Urbana Champaign, USA with Prof. John F. Hartwig. Fellowship from Swiss National Science Foundation (2006-2007) and from Hoffman-La Roche Foundation (2007-2008)
- 2001-2005 Research assistant at the Institute of Sciences and Chemical Engineering at EPFL, Lausanne, Switzerland (Ph.D. thesis under the supervision of Prof. Pierre Vogel)
- 2000 Chemical engineer, Development and production of creams and soaps at cosmetic company « Milla », Zagreb, Croatia
- 1999 Research fellow at Ruđer Bošković Institute, Zagreb, Croatia, (B.Sc. thesis under the supervision of Prof. Vitomir Šunić)
- 1993-2000 Chemistry assistant, Part time job, Development and production of laboratory chemicals for hospitals and press industry, Medikemija, Zagreb, Croatia

EDUCATION AND DEGREES:

- 2016 Associate professor academic title awarded by University of Rijeka, Croatia
- 2014 Associate professor academic title awarded by University of Osijek, Croatia
- 2014 Senior research associate, scientific title awarded by National Council for Science, Croatia
- 2012 Habilitation à diriger des recherches, Université Paris Descartes, Sorbonne Paris Cité, Laboratoire de Pharmacognosie -UMR CNRS 8638, Faculté des Sciences Pharmaceutique et Biologique.
- 2001-2005 PhD in Organic Synthesis and Physical Organic Chemistry, Thesis under the direction of Prof. Pierre Vogel, EPFL, Lausanne, Switzerland
- 2002 DEA multinational de Chimie Moléculaire (European Master's Degree in Organic Chemistry), Ecole Polytechnique de Palaiseau, France
- 1994-1999 Chemical engineer degree, specialization in organic chemistry, University of Zagreb, Croatia (GPA 4.89/5); B.Sc. thesis under direction of Prof. Vitomir Šunić, Ruđer Bošković Institute, Zagreb, Croatia

COURSES:

- 2002-2005 Practical NMR Analysis (EPFL, Switzerland)
- 2004 General Chemistry Practical work (EPFL, Switzerland)
- 2005 Organic Chemistry, Practical work (EPFL, Switzerland)
- 2005 NMR Structural Analysis (EPFL, Switzerland)
- 2010-2011 Organic Chemistry (University of Rijeka)
- 2010-2011 Organic Chemistry practical work (University of Rijeka)
- 2015-2016 Organic Chemistry 2 (University of Osijek)
- 2016 Organic Chemistry Practical Work 1 (University of Osijek)

2016	Organic Chemistry Practical Work 2 (University of Osijek)
2016	Methods of Organic Chemistry (University of Osijek)
2017	Green Chemistry (University of Rijeka)
2017	Retrosynthesis (University of Rijeka)
2017	Physical-Organic Chemistry (University of Rijeka)

DISTINCTIONS:

2007-2008	Roche Research Foundation Postdoctoral Fellowship
2006-2007	Swiss National Science Foundation Perspective Researcher Fellowship
1999	Ruder Bosković Institute Scholarship
1997-1999	Scholarship for the excellence from Croatian Ministry of Science and Technology (GPA of the studies: 4.89/5)

PROJECTS AND PARTICIPATION ON THE PROJECTS:

2001-2006	Swiss National Science Foundation(Grant 2000-20100002/1), Switzerland, Coordinator: professor P. Vogel
2001-2006	Federal Office for Education and Science (Grant COI. 0071, COST D13/010/01), Switzerland, Coordinator: professor P. Vogel
2007-2008	Mechanistic Studies of Asymmetric Ir-Catalyzed Allylic Substitution, Swiss National Science Foundation, Perspective Researcher Grant, Switzerland
2008	Stereoselective Ir-Catalyzed Allylic Substitutions: Mechanism and Characterization of Key Intermediate, Roche Research Foundation, Switzerland
2009-2011	Swiss National Science Foundation(Grant 2008-20120004/1), Switzerland, Coordinator: professor P. Vogel
2012-2014	National Agency for Research (Grant ANR-09-CP2D-09-01), France, Coordinator: professor B. Deguin
2015-2016	Croatian Science Foundation (Grant 9060), Coordinator: professor Milan Sak Bosnar
2015-	Croatian Science Foundation (Grant 4459), Coordinator: professor Branimir Hackenberger Kutuzović

SUPERVISION OF YOUNG RESEARCHERS:

a) PhD Thesis

- 2009: Volla, Chandra Mouliswara Rao: "New developments in iron-catalyzed carbon-carbon bond forming reactions."; EPFL, Switzerland (Co-mentor with Prof. Pierre Vogel, publications N° 12, 13, 15)
- 2014: Hugues Lemoine "Les sécoiridoïdes d '*Olea europaea* et du *Lonicera tatarica*: matières premières destinées à la conception de nouveaux synthons chiraux pour la synthèse de composés biologiquement actifs et outils pour le développement de nouvelles méthodes d'extraction et de synthèse ". L'Université Paris Descartes, France (Co-mentor with Prof. Brigitte Deguine, publication N° 19)

b) Master Thesis

- 2004: Ekstrand, M. "Chemoselective Cleavage of Methylsubstituted Allyl Ethers by Polysulfones", EPFL, Switzerland (publication N° 6)
- 2005: Nadj, S. "New methods for Silylation of Polyols, Thiols and Oximes", EPFL, Switzerland
- 2009: Tchawou Wandji, A. Silyl Methallylsulfonates: Efficient and Powerful Agents for the Chemoselective Silylation of Polyols And Sugars, EPFL (publication N° 23)
- 2010: Pavels Ostrovskis, Click Chemistry in Biological Studies, Riga Technical University, Latvia (Komentors Prof. M. Turks, publication N° 16)
- 2011: Sedigh-Zadeh, R. "The Intermediacy of Sulfinic and Carboxylic Acids Anhydrides in the Direct Synthesis of Amides, Esters and Ketones Giving Only Volatile Co-products", EPFL, Switzerland
- 2012: Salle de Chou, Y. Chromatographie par partage centrifuge d'extrait aqueux d'*Aucuba Japonica*: Isolement rapide, efficace et écologique d'aucuboside, Université Paris Descartes, Sorbonne Paris Cité, France (publication N° 20, communication N° 8, 9)
- 2012: Vinh, N. D. Synthesis of amino iridoids derivatives with aliphatic amines, Université Paris Descartes, Sorbonne Paris Cité, France.

8. 2012: Cyprien, B. Synthesis of amino iridoids derivatives with aromatic amines, Université Paris Descartes, Sorbonne Paris Cité, France.
9. 2013: Jevgeinija Luginina Synthesis of new derivatives of 3-C-nitromethyl-hexofuranoses, (Riga Technical University, Latvia, Co-mentor with Prof. M. Turks, Publication N° 18).
10. 2013: Bettach, J. Isolation of Iridioids by Centrifugal Partition Chromatography, Université Paris Descartes, Sorbonne Paris Cité, France. (Publication N° 20)

c) Diploma work

1. 2016: Ižaković, M. Synthesis of quaternary ammonium salt of pyridine and isoquinoline, and their use in preparation of the surfactant electrodes, University of Osijek
2. 2016: Koprivnjak, M. Synthesis of quaternary ammonium salt of imidazole with potential antibacterial activity, University of Osijek
3. 2016: Faletar, M. Synthesis of quaternary ammonium salt of the piperidine imidazole with potential antibacterial activity, University of Osijek
4. 2016: Andabak, M. Synthesis of quaternary ammonium salt of triazole with potential cytotoxic activity, University of Osijek
5. 2016: Snježana Šarić, The synthesis of quaternary ammonium salts of alkylamines with potential cytotoxic activity, University of Osijek
6. 2016. Živković Ivana, Chemistry of vitamin B6 and synthesis of novel derivatives of vitamin B6, University of Osijek co-mentor with doc. Gašo Sokač, Dajana

d) Exchange professor

2008: Prof. El-Metwally, M. A. Development of New Silylation Agents, EPFL. (Research visit 4 months)

PROFESSIONAL AND ADMINISTRATIVE FUNCTIONS:

2002-2006 Head of NMR Center at LGSA, EPFL, Switzerland

2015-2016 ERASMUS coordinator of the Department of Chemistry, University OF Osijek

EDITORIAL WORK:

2014-2016 Invited editor of two special issues of the journal Current Organic Chemistry

2014- Editor of journal Material Science and Applied Chemistry

PUBLICATIONS:

1. **Markovic, D.**; Hameršak, Z.; Višnjavec, A.; Kojić Prodić, B.; Šunjić, V. *syn/anti* Diastereoselectivity in the Aldol Reaction of Aldehydes with the C(3) Carbanion of 1,3-Dihydro-2H-1,4-benzodiazepin-2-one, *Helv. Chim. Acta*, **2000**, *83*, 603.
2. **Markovic, D.**; Roversi, E.; Scoppelliti, R.; Vogel, P.; Meana, R.; Sordo, J. A. The Hetero-Diels-Alder Addition of Sulfur dioxide: The Pseudo-chair Conformation of a 4,5-Dialkylsultine, *Chem. Eur. J.* **2003**, *9*, 4911-4915.
3. **Markovic, D.**; Vogel, P. Polysulfones: Catalysts for Alkene Isomerization, *Angew. Chem. Int. Ed.* **2004**, *43*, 2928-2930.
4. **Markovic, D.**; Vogel, P. Allyl, Methallyl, Prenyl and Methylprenyl Ethers as Protected Alcohols: their Selective Cleavage with Diphenyldisulfone under Neutral Conditions, *Org. Lett.* **2004**, *6*, 2693-2696.¹
5. **Markovic, D.**; Steunenber, P.; Ekstrand, M.; Vogel, P. Polysulfones: Solid Organic Catalysts for the Chemoselective Cleavage of Methylsubstituted Allyl Ethers under Neutral Conditions. New Strategy for Alcohol Protection/Deprotection, *Chem. Commun.* **2004**, 2444-2445.
6. **Markovic, D.**; Varela-Álvarez, A.; Sordo, J. A.; Vogel, P. Mechanism of the Diphenyldisulfone-Catalyzed Isomerization of Alkenes. Experimental and Quantum Chemistry Studies, *J. Am. Chem. Soc.* **2006**, *128*, 7782-7795.²
7. **Markovic, D.**; Hartwig, J. F. Resting State and Kinetic Studies on the Asymmetric Allylic Substitutions Catalyzed by Iridium-Phosphoramidite Complexes, *J. Am. Chem. Soc.* **2007**, *129*, 11680-11681.
8. Vogel, P.; Turks, M.; Bouchez, L.; **Markovic, D.**; Varela-Alvarez, A.; Sordo, J. A. New Organic Chemistry of Sulfur Dioxide, *Acc. Chem. Res.* **2007**, *40*, 931-942.³

¹Deprotection procedure published in: Greene, T. W.; Wuts, P. G. M. *Green's Protective Groups in Organic Synthesis*; Wiley: New York, 2007; p 96-97.

²Highlighted in: Koeck, M.; Lindel, T *Angew. Chem., Int. Ed.* **2007**, *46*, 5268-5271.

³One of the most accessed articles for the third quarter 2007.

9. Sherzod, M.; **Markovic, D.**; Hartwig, J. F. The Allyl Intermediate in Regioselective and Enantioselective Iridium-Catalyzed Asymmetric Allylic Substitution Reactions, *J. Am. Chem. Soc.* **2009**, *131*, 7228-7229.⁴
10. Weix, D.; **Markovic, D.**; Ueda, M.; Hartwig, J. F. Direct, Intermolecular, Enantioselective, Iridium-Catalyzed Allylation of Carbamates to Form Carbamate-Protected, Branched Allylic Amines, *Org. Lett.* **2009**, *10*, 1147-1150.⁵
11. Varela-Álvarez, A.; **Markovic, D.**; Sordo, J. A.; Vogel, P. The Desulfinylation of Prop-2-enesulfinic Acid: Experimental Results and Mechanistic Theoretical Analysis, *J. Am. Chem. Soc.* **2009**, *131*, 9547-9561.
12. Volla, C. M. R.; **Markovic, D.**; Dubbaka S. R.; Vogel, P. Ligandless Iron-catalyzed Desulfinylative C-C Allylation reactions using Grignard reagents and Alk-2-enesulfonyl Chlorides, *Eur. J. Org. Chem.* **2009**, *36*, 6281-6288.⁶
13. **Markovic, D.***; Volla, C. M. R.; Varela-Álvarez, A.; Sordo, J. A.; Vogel, P. BCl₃-Mediated H-Ene Reaction of Sulfur Dioxide and Unfunctionalized Alkenes, *Chem. Eur. J.* **2010**, *20*, 5969-5975.
14. Hanley, P.; **Markovic, D.**; Hartwig, J. F. Intermolecular Insertion of Ethylene and Octene into a Palladium-Amide Bond. Spectroscopic Evidence for an Ethylene Amido Intermediate, *J. Am. Chem. Soc.* **2010**, *132*, 6302-6303.⁷
15. Volla, C. M. R.; **Markovic, D.**; Laclef, S.; Vogel, P. Catalyzed Desulfinylative Allylation of Carbonyl Compounds with Alk-2-enesulfonyl Chlorides and Silyl Alk-2-enesulfonates, *Chem. Eur. J.* **2010**, *30*, 8984-8988.
16. Ostrovskis, P.; Volla, C. M. R.; Turks, M.; **Markovic, D.** Application of Metal Free Click Chemistry in Biological Studies, *Curr. Org. Chem.* **2013**, *17*, 609-639.
17. Zambrón, B.; Dubbaka, S. R.; **Markovic, D.**; Clavijo, E. M.; Vogel, P. Amides from Carboxylic Acids and Amines via Carboxyl and Sulfinyl mixed Anhydrides, *Org. Lett.* **2013**, *15*, 2550-2553.
18. Turks, M.; Vēze, K.; Kiseļovs, G.; Mackeviča, J.; Lugiņina, J.; Mishnev, A.; **Markovic, D.** Synthesis and X-Ray Studies of Novel 3-C-Nitromethyl-Hexofuranoses, *Carbohydr. Res.*, **2014**, *391*, 82-88.
19. Lemoine, H.; **Markovic, D.**; Deguin, B. Mild and Chemoselective Lactone Ring-Opening with (TMS)ONa. Mechanistic Studies and Application to Sweroside Derivatives, *J. Org. Chem.* **2014**, *79*, 4358-4366.
20. **Markovic, D.**; Sallé de Chou, Y.; Barboux, C.; Grougnet, R.; Deguin, B. Centrifugal partition chromatography: efficient tool to access highly polar and unstable synthetic compounds in large scale, *RCS Advances*, **2014**, *4*, 63254.
21. **Markovic, D.**; Kolympadi, M.; Deguin, B.; Poree, F.-H.; Turks, M. The Isolation and Synthesis of Neodolastane Diterpenoids, *Nat. Prod. Rep.*, **2015**, *32*, 230. Together with cover page of NPR issue 2, 2015.
22. Turks, M.; Rolava, E.; Stepanovs, D.; Mishnev, A.; **Markovic, D.** Novel 3-C-aminomethyl-hexofuranose-derived thioureas and their testing in asymmetric catalysis, *Tetrahedron Asymmetry*, **2015**, *26*, 952.
23. **Markovic, D.**; Tchawou, W. A.; Novosjolova, I.; Laclef, S.; Stepanovs, D.; Turks, M.; Vogel, P. Synthesis and Applications of Silyl 2-Methylprop-2-ene-1-sulfonates in Preparative Silylation and GC-Derivatization Reactions of Polyols and Carbohydrates, *Chem. Eur. J.*, **2016**, *22*, 4196-4205.
24. Mierina, I.; Gudelis, E.; Stepanovs, D.; Jure, M.; Mishnev, A.; Kolympadi, M.; **Marković, D.** Crystal structure of 3-(4-hydroxy-3-methoxyphenyl)-N-phenylpropanamide, C₁₆H₁₇NO₃, *Z. Krist. – New Cryst. St.*, **2016**, *231*, 657-659.
25. Cottet, K.; Kolympadi, M.; **Marković, D.**; Lallemand, M.-C. Natural Products Biosynthesis involving a Putative Diels-Alder Reaction, *Curr. Org. Chem.* **2016**, *20*, 2421-2442.
26. Cottet, K.; Kolympadi, M.; Lallemand, M.-C.; **Marković, D.** Artificial Enzyme-Catalyzed Diels-Alder Cycloadditions, *Curr. Org. Chem.* **2016**, *20*, 2254-2281.
27. Stivojevic, M; **Markovic, D.** Recent Synthetic Advances and Biological Activities of Triazolothiadiazoles, Manuscript in preparation.

PATENT APPLICATION:

1. Šunjić, V.; Hameršak, Z.; Majerić-Elenkov M.; **Markovic, D.** Syn and anti Stereoisomeric 3-(1'-Hydroxyalkyl and 1'-Hydroxyaryl) of 1,4-Benzodiazepine-2-ones, *Croat. Pat. Appl.* P990379A, **2001**.

CHAPTERS IN BOOKS:

1. **Markovic, D.**; Vogel, P. Diphenyl disulfone, In: *e-Encyclopedia of Reagents for Organic Synthesis*, Ed. Paquette, L. A., John Wiley & Sons: New York **2005**, Published online: <http://www.mrw.interscience.wiley.com/eros>.
2. **Markovic, D.**; Hartwig, J. F. Asymmetric Allylic Substitutions Catalyzed by Iridium-Phosphoramidate Ethylene Complex. Roche Annual Reports 2007, **2008**, 204-212.
3. **Markovic, D.**; Vogel, P. Diphenyl disulfone, In: *Handbook of Reagents for Organic Synthesis, Reagents for Radical*

⁴ Highlighted in: *Chem. Eng. News*, **2009**, *87*, 31-33; available online :

<http://pubs.acs.org/subscribe/journals/cen/87/i24/html/8724sci2.html>.

⁵ Highlighted by the Organic Chemistry webpage: <http://www.organic-chemistry.org/abstracts/lit2/595.shtm>.

⁶ Covering page of issue 36 of *Eur. J. Org. Chem.* **2009**.

⁷ Highlighted in: *Chemical and Engineering News* **2010**, *88*, 41; <http://pubs.acs.org/cen/science/88/8823sci2.html>

- and Radical Ion Chemistry, Ed. Chrich, D., John Wiley & Sons: West Sussex **2008**, 288-290.
4. Vogel, P.; **Markovic, D.**; Turks, M. Sulfur Dioxide: a Powerful Tool for the Construction of Carbon-Carbon Bonds. In *Stereoselective Synthesis of Drugs & Natural Products*, Andrushko V., Andrushko N., Eds.; Wiley: New York, 2013.

LECTURES AND SEMINARS:

1. 09.10.2003. Mechanism of the Isomerization of Alkenes Induced by Polysulfones, **Swiss Chemical Society Meeting, Lausanne**
2. 15.05.2008. SO₂ Chemistry and Iridium Catalyzed Allylic Substitutions, **University of Bern** (Invited)
3. 04.09.2008. Iridium Catalyzed Allylic Substitutions: Mechanism and Catalysts Improvements by Rational Design, **Swiss Chemical Society Meeting, Zürich**
4. 09.07.2009. Polysulfones as New Organic Catalysts and Isolation of Active Intermediates in Iridium Catalyzed Allylic Substitutions, **Albert-Ludwigs Universität Freiburg, Germany.**
5. 25.08.2009. Ene-Reaction of Sulfur Dioxide, Isomerization of Alkenes Induced by Polysulfones and Iridium Catalyzed Allylic Substitutions, **University of Groningen, Netherlands**
6. 04.09.2009. The Endergonic Ene Reaction of Alkenes and SO₂ Can Now Be Used to Prepare β,γ -Unsaturated Sulfones and Sulfonamides, **Swiss Chemical Society Meeting Lausanne.**
7. 27.02.2010. New Organic Chemistry of Sulfur Dioxide and Mechanistic Insights in the Iridium Catalyzed Allylic Substitutions, **University of Rijeka, Croatia** (Invited)
8. 23.03.2010. Ene- and Hetero-Diels-Alder Reactions of Sulfur Dioxide: New Reagents and Total Asymmetric Synthesis of Dolabriferol, Abstracts of Papers, 239th **ACS National Meeting, San Francisco, CA, United States.**
9. 15.06.2010. Novel Organic Chemistry of Carbon Dioxide, **SNSF, Bern Switzerland.**
10. 4.3.2011. Recent Advances in Sulfur Dioxide Chemistry, **University of Fribourg, Switzerland**
11. 18.5.2011. Enantioselective Ir-Catalyzed Allylic Substitutions: Isolation of the Key Intermediates and Rational, Mechanistically Driven Improvements of the Catalyst, **Galapagos Research & Development Institute, Zagreb, Croatia**
12. 14.7.2011. Chemistry of Sulfur Dioxide and Isolation of Active Intermediates in Iridium Catalyzed Allylic Substitutions, **Ruder Bosković Institute, Zagreb, Croatia**
13. 14.09.2011. Iridium Catalyzed Nucleophilic Substitutions, **University of Bath, United Kingdom**
14. 29.09.2011. New Organic Chemistry of Sulfur Dioxide and Iridium Catalyzed Nucleophilic Substitutions, **Novartis AG, Basel, Switzerland**
15. 04. 10.2011. New Organic Chemistry of Sulfur Dioxide, **University of Neuchatel, Switzerland**
16. 26.07.2012. Mechanism, Scope and Synthetic Applications of Ir-Catalyzed Nucleophilic Substitutions, **DSM, Stein AG, Švicarska**
17. 03.09.2012. Enantioselective Ir-Catalyzed Nucleophilic Substitutions and New Sulphur Dioxide Organic Chemistry, **Syngenta Crop Protection Münchwilen AG, Stein AG, Švicarska**
18. 20.05.2014. Chemistry of Sulfur Dioxide, Metal Catalyzed Nucleophilic Substitutions and New Isolation Techniques of Natural Products, Croatian Chemical Society, **University of Osijek, Croatia**
19. 21.11.2014. Sulphur Dioxide Organic Chemistry, New Techniques of Isolation of Natural Products and Enantioselective Ir-Catalyzed Nucleophilic Substitutions, **Carbogen-Amcis AG, Švicarska**

COMMUNICATIONS:

1. 07. 2000. Hamersak, Z.; **Markovic, D.**; Šunjić, V. Preparation and Relative (*syn/anti*) Configuration of 3-(substituted)hydroxymethyl 7-chloro-1,3-dihydro-1-methyl-5-phenyl- 1,4-benzodiazepin-2-ones, **8th Belgian Organic Synthesis, Ghent, Belgium.**
2. 12. 2002. **Markovic, D.**; Vogel, P. Radical Chain Isomerization of Alkenes Induced by Polysulfones, Proceedings of molecules de future: **Les Defits de la Synthèse Organique, Lyon, France.**
3. 09.2003. **Markovic, D.**; Vogel, P. A New Sequential Method for the Hydrolysis of Allyl Ethers Induced by a "Green" Catalyst: a New Strategy for Alcohol Deprotection, **13th European Symposium on Organic Chemistry, Dubrovnik, Croatia.**
4. 09.2003. **Markovic, D.**; Vogel, P. A Revised Mechanism for the Sulfur Dioxide Catalyzed Alkene Isomerization, **13th European Symposium on Organic Chemistry, Dubrovnik, Croatia.** (Oral communication).
5. 10.2003. **Markovic, D.**; Steunenberg, P.; Vogel, P. Successive Cleavage of Allylic Ethers by Polysulfone,

6. 10.2004. **Swiss Chemical Society Meeting Lausanne** (*Chimia*, **2003**, 57, 448).
Markovic, D.; Vogel, P. New strategy for the semi-protection of polyols. Diphenyldisulfone a Neutral Catalyst for the Chemoselective Cleavage of Methyl Substituted Allyl Ethers, **Swiss Chemical Society Meeting, Zürich** (*Chimia*, **2004**, 58, 526).
7. 10.2004. **Markovic, D.**; Vogel, P. Polysulfones as "Green" Organic Catalyst for Selective Alkene Isomerization and Hole Catalyzed Reactions, **Swiss Chemical Society Meeting, Zürich** (*Chimia*, **2004**, 58, 526).
8. 04.2012. **Markovic, D.**; Grougnet, R.; Salle de Chou, Y.; Deguin, B. Efficient, Fast and Environmentally-Friendly Purification of Aucubin Using Centrifugal Partition Chromatography, **1st International Symposium of Pharmacognosy and 8th Brazilian Symposium of Pharmacognosy, Ilhéus - Bahia, Brazil**.
9. 06.2012. **Markovic, D.**; Grougnet, R.; Salle de Chou, Y.; Deguin, B. Centrifugal Partition Chromatography - Eco-Friendly Method for the Multigram Purification of Aucubin and Aucubigenin, **2012 International Congress on Natural Products Research, New York, USA**.
10. 07.2013. El Mourabet, M.; Lecsö, M.; Salle De Chou, Y.; **Markovic, D.**; Litaudon, M.; Butel, M.-J.; Deguin B. Regioselective and Stereospecific Methoxylation of Aucubin: An access to Novel Antibacterial Iridoid Derivatives, **18th European Symposium on Organic Chemistry 2013, Marseille, France**.
11. 07.2013. **Markovic, D.**; Salle De Chou, Y.; Deguin B. Centrifugal Partition Chromatography as a New Tool for the Efficient and Green Purification of Highly-Polar and Unstable Products on Multigram Scale, **18th European Symposium on Organic Chemistry 2013, Marseille, France**.
12. 09.2016. Gašo-Sokač, D.; Lovrić, M.; **Marković, D.**; Bušić, V. Sinteza novih dioksima iz piridoksal oksima i 2-bromacetofenon-oksima, **16th Ružička days "Today science - tomorrow industry**, Jukić, A (ur.). Zagreb: Hrvatsko društvo kemijskih inženjera i tehnologa, Prehrambeno-tehnološki fakultet, Sveučilište J.J. Strossmayera u Osijeku, 2016. 27-27 (poster, međunarodna recenzija, sažetak)
13. 10.2016 Jozanovića, M.; Sokač-Gašo, D.; Šarkanj, B.; Kraševaca, M.; **Marković, D.** Synthesis of new nitrogen heterocycles based antibactericides, **Kongres hemičara i tehnologa BiH sa međunarodnim učešćem**, Korač, F (ur.). Sarajevo: Prirodoslovno Matematički Fakultet, Sveučilište u Sarajevu, Abstract: *Bull. Chem. Tech. BiH*, **2016**, 47, XX.

REVIWING FOR:

1. 2016. *Chemistry and Biodiversity*, Manuscript ID: cbdv.201600281
2. 2016. *Molbank*, Manuscript ID: molbank-129902
3. 2013. *Letters in Organic Chemistry*, Manuscript ID: BSP-LOC-2013-460
4. 2013. *Drug Delivery Letters*, Manuscript ID: DDL-70
5. 2013. *Letters in Organic Chemistry*, BSP-LOC-2013-401
6. 2011. *Journal of the American Chemical Society*, Manuscript ID: ja-2010-108485
7. 2011. *Dyes and Pigments*, Manuscript ID: DYPI-D-10-00689R3
8. 2010. *Journal of the American Chemical Society*, Manuscript ID: ja-2010-09953v
9. 2008. *Journal of the American Chemical Society*, Manuscript ID: ja-2008-08938m

MEMBER OF PROFESSIONAL ORGANIZATIONS:

1. 2001.-2012. Swiss Chemical Society
2. 2006.-2008. American Chemical Society
3. 2012.-2015. French Chemical Society
4. 2002.-2006. i 2015 Croatian Chemical Society

REFERENCE:

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- Prof. John F. Hartwig, Henry Rapoport Chair in Organic Chemistry, University of California, Department of Chemistry, 718 Latimer Hall MC #1460 Berkeley, CA 94720-1460; Email: jhartwig@berkeley.edu; Phone: +1.510.642.2038; Fax: +1.510.642.2049.

- Prof. Deguin Brigitte, Laboratoire Pharmacognosie - UMR CNRS 8638, Faculté des Sciences Pharmaceutiques et Biologiques, Université Paris Descartes, 4 av. de l'Observatoire, 75006 Paris, Email: brigitte.deguin@parisdescartes.fr; Phone: +33.1.53.73.15.81; Fax : +33.1.40.46.96.58.
- Prof. José Ángel Sordo, Laboratorio de Química Computacional, Departamento de Química Física y Analítica, Universidad de Oviedo, Principado de Asturias, Spain, email: jasg@uniovi.es; Phone: +34.98.510.50.16.
- Prof. Reinhard Neier, Laboratoire de chimie organique de synthèse, Rue Emile-Argand 11, Case postale 158, 2009 Neuchâtel, Email: reinhard.neier@unine.ch; Phone: +41.32.718..28; Fax : +41.32.718.25.11.

PUBLICATION AND PATENT RECORD:

28. **Markovic, D.**; Hameršak, Z.; Višnjevac, A.; Kojić Prodić, B.; Šunjić, V. *syn/anti* Diastereoselectivity in the Aldol Reaction of Aldehydes with the C(3) Carbanion of 1,3-Dihydro-2H-1,4-benzodiazepin-2-one, *Helv. Chim. Acta*, **2000**, *83*, 603.
29. Šunjić, V.; Hameršak, Z.; Majerić-Elenkov M.; **Markovic, D.** *Syn* and *anti* Stereoisomeric 3-(1'-Hydroxyalkyl and 1'-Hydroxyaryl) of 1,4-Benzodiazepine-2-ones, *Croat. Pat. Appl.* P990379A, **2001**.
30. **Markovic, D.**; Roversi, E.; Scoppelliti, R.; Vogel, P.; Meana, R.; Sordo, J. A. The Hetero-Diels-Alder Addition of Sulfur dioxide: The Pseudo-chair Conformation of a 4,5-Dialkylsultine, *Chem. Eur. J.* **2003**, *9*, 4911-4915.
31. **Markovic, D.**; Vogel, P. Polysulfones: Catalysts for Alkene Isomerization, *Angew. Chem. Int. Ed.* **2004**, *43*, 2928-2930.
32. **Markovic, D.**; Vogel, P. Allyl, Methallyl, Prenyl and Methylprenyl Ethers as Protected Alcohols: their Selective Cleavage with Diphenyldisulfone under Neutral Conditions, *Org. Lett.* **2004**, *6*, 2693-2696.⁸
33. **Markovic, D.**; Steunenber, P.; Ekstrand, M.; Vogel, P. Polysulfones: Solid Organic Catalysts for the Chemoselective Cleavage of Methylsubstituted Allyl Ethers under Neutral Conditions. New Strategy for Alcohol Protection/Deprotection, *Chem. Commun.* **2004**, 2444-2445.
34. **Markovic, D.**; Vogel, P. Diphenyl disulfone, In: *e-Encyclopedia of Reagents for Organic Synthesis*, Ed. Paquette, L. A., John Wiley & Sons: New York **2005**, Published online: <http://www.mrw.interscience.wiley.com/eros>.
35. **Markovic, D.**; Varela-Álvarez, A.; Sordo, J. A.; Vogel, P. Mechanism of the Diphenyldisulfone-Catalyzed Isomerization of Alkenes. Experimental and Quantum Chemistry Studies, *J. Am. Chem. Soc.* **2006**, *128*, 7782-7795.⁹
36. **Markovic, D.**; Hartwig, J. F. Resting State and Kinetic Studies on the Asymmetric Allylic Substitutions Catalyzed by Iridium-Phosphoramidite Complexes, *J. Am. Chem. Soc.* **2007**, *129*, 11680-11681.
37. Vogel, P.; Turks, M.; Bouchez, L.; **Markovic, D.**; Varela-Alvarez, A.; Sordo, J. A. New Organic Chemistry of Sulfur Dioxide, *Acc. Chem. Res.* **2007**, *40*, 931-942.¹⁰
38. **Markovic, D.**; Hartwig, J. F. Asymmetric Allylic Substitutions Catalyzed by Iridium-Phosphoramidate Ethylene Complex. Roche Annual Reports 2007, **2008**, 204-212.
39. **Markovic, D.**; Vogel, P. Diphenyl disulfone, In: *Handbook of Reagents for Organic Synthesis, Reagents for Radical and Radical Ion Chemistry*, Ed. Chrich, D., John Wiley & Sons: West Sussex **2008**, 288-290.
40. Sherzod, M.; **Markovic, D.**; Hartwig, J. F. The Allyl Intermediate in Regioselective and Enantioselective Iridium-Catalyzed Asymmetric Allylic Substitution Reactions, *J. Am. Chem. Soc.* **2009**, *131*, 7228-7229.¹¹
41. Weix, D.; **Markovic, D.**; Ueda, M.; Hartwig, J. F. Direct, Intermolecular, Enantioselective, Iridium-Catalyzed Allylation of Carbamates to Form Carbamate-Protected, Branched Allylic Amines, *Org. Lett.* **2009**, *10*, 1147-1150.¹²
42. Varela-Álvarez, A.; **Markovic, D.**; Sordo, J. A.; Vogel, P. The Desulfinylation of Prop-2-enesulfinic Acid: Experimental Results and Mechanistic Theoretical Analysis, *J. Am. Chem. Soc.* **2009**, *131*, 9547-9561.
43. Volla, C. M. R.; **Markovic, D.**; Dubbaka S. R.; Vogel, P. Ligandless Iron-catalyzed Desulfinylative C-C Allylation reactions using Grignard reagents and Alk-2-enesulfonyl Chlorides, *Eur. J. Org. Chem.* **2009**, *36*, 6281-6288.¹³
44. **Markovic, D.***; Volla, C. M. R.; Varela-Álvarez, A.; Sordo, J. A.; Vogel, P. BCl₃-Mediated H-Ene Reaction of Sulfur Dioxide and Unfunctionalized Alkenes, *Chem. Eur. J.* **2010**, *20*, 5969-5975.
45. Hanley, P.; **Markovic, D.**; Hartwig, J. F. Intermolecular Insertion of Ethylene and Octene into a Palladium-Amide Bond. Spectroscopic Evidence for an Ethylene Amido Intermediate, *J. Am. Chem. Soc.* **2010**, *132*, 6302-6303.¹⁴
46. Volla, C. M. R.; **Markovic, D.**; Laclef, S; Vogel, P. Catalyzed Desulfinylative Allylation of Carbonyl Compounds with Alk-2-enesulfonyl Chlorides and Silyl Alk-2-enesulfonates, *Chem. Eur. J.* **2010**, *30*, 8984-8988.
47. Vogel, P.; **Markovic, D.**; Turks, M. Sulfur Dioxide: a Powerful Tool for the Construction of Carbon-Carbon Bonds. In *Stereoselective Synthesis of Drugs & Natural Products*, Andrushko V., Andrushko N., Eds.; Wiley: New York, 2013.
48. Ostrovskis, P.; Volla, C. M. R.; Turks, M.; **Markovic, D.*** Application of Metal Free Click Chemistry in Biological Studies, *Curr. Org. Chem.* **2013**, *17*, 609-639.

⁸Deprotection procedure published in: Greene, T. W.; Wuts, P. G. M. *Green's Protective Groups in Organic Synthesis*; Wiley: New York, 2007; p 96-97.

⁹Highlighted in: Koeck, M.; Lindel, T *Angew. Chem., Int. Ed.* **2007**, *46*, 5268-5271.

¹⁰One of the most accessed articles for the third quarter 2007.

¹¹ Highlighted in: *Chem. Eng. News*, **2009**, *87*, 31-33; available online :

<http://pubs.acs.org/subscribe/journals/cen/87/i24/html/8724sci2.html>.

¹²Highlighted by the Organic Chemistry webpage: <http://www.organic-chemistry.org/abstracts/lit2/595.shtm>.

¹³Covering page of issue 36 of *Eur. J. Org. Chem.* **2009**.

¹⁴Highlighted in: *Chemical and Engineering News* **2010**, *88*, 41; <http://pubs.acs.org/cen/science/88/8823sci2.html>

49. Zambroń, B.; Dubbaka, S. R.; **Markovic, D.**; Clavijo, E. M.; Vogel, P. Amides from Carboxylic Acids and Amines via Carboxyl and Sulfinyl mixed Anhydrides, *Org. Lett.* **2013**, *15*, 2550-2553.
50. Turks, M.; Vēze, K.; Kiseļovs, G.; Mackeviča, J.; Lugiņina, J.; Mishnev, A.; **Markovic, D.** Synthesis and X-Ray Studies of Novel 3-C-Nitromethyl-Hexofuranoses, *Carbohydr. Res.*, **2014**, *391*, 82-88.
51. Lemoine, H.; **Markovic, D.**; Deguin, B. Mild and Chemoselective Lactone Ring-Opening with (TMS)ONa. Mechanistic Studies and Application to Sweroside Derivatives, *J. Org. Chem.* **2014**, *79*, 4358-4366.
52. **Markovic, D.**; Sallé de Chou, Y.; Barboux, C.; Grougnet, R.; Deguin, B. Centrifugal Partition Chromatography as a New Tool for the Efficient and Green Purification of Synthetic Intermediates on Multigram Scale, *RCS Advances*, **2014**, *4*, 63254-63259.
53. **Markovic, D.***; Kolypadi, M.; Deguin, B.; Poree, F.-H.; Turks, M. The Isolation and Synthesis of Neodolastane Diterpenoids, *Nat. Prod. Rep.*, **2015**, *32*, 230-255. (Journal cover picture)
54. Turks, M.; Rolava, E.; Stepanovs, D.; Mishnev, A.; **Markovic, D.** Novel 3-C-aminomethyl-hexofuranose-derived thioureas and their testing in asymmetric catalysis, *Tetrahedron Asymmetry*, **2015**, *26*, 952.
55. **Markovic, D.***; Tchawou, W. A.; Novosjolova, I.; Laclef, S.; Stepanovs, D.; Turks, M.; Vogel, P. Synthesis and Applications of Silyl 2-Methylprop-2-ene-1-sulfonates in Preparative Silylations and GC Derivatizations of Polyols and Carbohydrates, *Chem. Eur. J.*, **2016**, *22*, 4196-4205.
56. Mierina, I.; Gudelis, E.; Stepanovs, D.; Jure, M.; Mishnev, A.; Kolypadi, M.; **Markovic, D.** Crystal structure of 3-(4-hydroxy-3-methoxyphenyl)-N-phenylpropanamide, C₁₆H₁₇NO₃, *Z. Krist. – New. Cryst. St.*, available online: 10.1515/ncrs-2015-0235.
57. Cottet, K.; Kolypadi, M.; Lallemand, M.-C.; **Markovic, D.*** Enzyme-Catalyzed Diels-Alder Cycloadditions, *Curr. Org. Chem.*, in press.
58. Cottet, K.; Kolypadi, M.; **Markovic, D.***; Lallemand, M.-C. Natural Products Biosynthesis involving a Putative Diels-Alder Reaction, *Curr. Org. Chem.*, in press.

LECTURES AND SEMINARS:

1. 09.10.2003. Mechanism of the Isomerization of Alkenes Induced by Polysulfones, **Swiss Chemical Society Meeting, Lausanne**
2. 15.05.2008. SO₂ Chemistry and Iridium Catalyzed Allylic Substitutions, **University of Bern (Invited)**
3. 04.09.2008. Iridium Catalyzed Allylic Substitutions: Mechanism and Catalysts Improvements by Rational Design, **Swiss Chemical Society Meeting, Zürich**
4. 09.07.2009. Polysulfones as New Organic Catalysts and Isolation of Active Intermediates in Iridium Catalyzed Allylic Substitutions, **Albert-Ludwigs Universität Freiburg, Germany.**
5. 25.08.2009. Ene-Reaction of Sulfur Dioxide, Isomerization of Alkenes Induced by Polysulfones and Iridium Catalyzed Allylic Substitutions, **University of Groningen, Netherlands**
6. 04.09.2009. The Endergonic Ene Reaction of Alkenes and SO₂ Can Now Be Used to Prepare β,γ-Unsaturated Sulfones and Sulfonamides, **Swiss Chemical Society Meeting Lausanne.**
7. 27.02.2010. New Organic Chemistry of Sulfur Dioxide and Mechanistic Insights in the Iridium Catalyzed Allylic Substitutions, **University of Rijeka, Croatia (Invited)**
8. 23.03.2010. Ene- and Hetero-Diels-Alder Reactions of Sulfur Dioxide: New Reagents and Total Asymmetric Synthesis of Dolabriferol, Abstracts of Papers, **239th ACS National Meeting, San Francisco, CA, United States.**
9. 15.06.2010. Novel Organic Chemistry of Carbon Dioxide, **SNSF, Bern Switzerland.**
10. 4.3.2011. Recent Advances in Sulfur Dioxide Chemistry, **University of Fribourg, Switzerland**
11. 18.5.2011. Enantioselective Ir-Catalyzed Allylic Substitutions: Isolation of the Key Intermediates and Rational, Mechanistically Driven Improvements of the Catalyst, **Galapagos Research & Development Institute, Zagreb, Croatia**
12. 14.7.2011. Chemistry of Sulfur Dioxide and Isolation of Active Intermediates in Iridium Catalyzed Allylic Substitutions, **Ruder Bosković Institute, Zagreb, Croatia**
13. 14.09.2011. Iridium Catalyzed Nucleophilic Substitutions, **University of Bath, United Kingdom**
14. 29.09.2011. New Organic Chemistry of Sulfur Dioxide and Iridium Catalyzed Nucleophilic Substitutions, **Novartis AG, Basel, Switzerland**
15. 04. 10.2011. New Organic Chemistry of Sulfur Dioxide, **University of Neuchatel, Switzerland**
16. 20.05.2014. Chemistry of Sulfur Dioxide, Metal Catalyzed Nucleophilic Substitutions and New Isolation Techniques of Natural Products, Croatian Chemical Society, **University of Osijek, Croatia**

COMMUNICATIONS:

1. 07. 2000. Hameršak, Z.; **Markovic, D.**; Šunjić, V. Preparation and Relative (*syn/anti*) Configuration of 3-(substituted)hydroxymethyl 7-chloro-1,3-dihydro-1-methyl-5-phenyl- 1,4-benzodiazepin-2-ones, **8th Belgian Organic Synthesis, Ghent, Belgium.**
2. 12. 2002. **Markovic, D.**; Vogel, P. Radical Chain Isomerization of Alkenes Induced by Polysulfones, Proceedings of molecules de future: **Les Defits de la Synthèse Organique, Lyon, France.**
3. 09.2003. **Markovic, D.**; Vogel, P. A New Sequential Method for the Hydrolysis of Allyl Ethers Induced by a "Green" Catalyst: a New Strategy for Alcohol Deprotection, **13th European Symposium on Organic Chemistry, Dubrovnik, Croatia.**
4. 09.2003. **Markovic, D.**; Vogel, P. A Revised Mechanism for the Sulfur Dioxide Catalyzed Alkene Isomerization, **13th European Symposium on Organic Chemistry, Dubrovnik, Croatia.** (Oral communication).
5. 10.2003. **Markovic, D.**; Steunenber, P.; Vogel, P. Successive Cleavage of Allylic Ethers by Polysulfone, **Swiss Chemical Society Meeting Lausanne (Chimia, 2003, 57, 448).**
6. 10.2004. **Markovic, D.**; Vogel, P. New strategy for the semi-protection of polyols. Diphenyldisulfone a Neutral Catalyst for the Chemoselective Cleavage of Methyl Substituted Allyl Ethers, **Swiss Chemical Society Meeting, Zürich (Chimia, 2004, 58, 526).**
7. 10.2004. **Markovic, D.**; Vogel, P. Polysulfones as "Green" Organic Catalyst for Selective Alkene Isomerization and Hole Catalyzed Reactions, **Swiss Chemical Society Meeting, Zürich (Chimia, 2004, 58, 526).**
8. 04.2012. **Markovic, D.**; Grougnet, R.; Salle de Chou, Y.; Deguin, B. Efficient, Fast and Environmentally-Friendly Purification of Aucubin Using Centrifugal Partition Chromatography, **1st International Symposium of Pharmacognosy and 8th Brazilian Symposium of Pharmacognosy, Ilhéus - Bahia, Brazil.**
9. 06.2012. **Markovic, D.**; Grougnet, R.; Salle de Chou, Y.; Deguin, B. Centrifugal Partition Chromatography - Eco-Friendly Method for the Multigram Purification of Aucubin and Aucubigenin, **2012 International Congress on Natural Products Research, New York, USA.**
10. 07.2013. El Mourabet, M.; Lecsö, M.; Salle De Chou, Y.; **Markovic, D.**; Litaudon, M.; Butel, M.-J.; Deguin B. Regioselective and Stereospecific Methoxylation of Aucubin: An access to Novel Antibacterial Iridoid Derivatives, **18th European Symposium on Organic Chemistry 2013, Marseille, France.**
11. 07.2013. **Markovic, D.**; Salle De Chou, Y.; Deguin B. Centrifugal Partition Chromatography as a New Tool for the Efficient and Green Purification of Highly-Polar and Unstable Products on Multigram Scale, **18th European Symposium on Organic Chemistry 2013, Marseille, France.**