Peer-reviewed published papers:

42. **Ilich, P.,** Xanthine Dehydrogenase Active Site: Chiral Switching and Substrate Coordination, *Croat. Chem. Acta* **2016**, *89*(4), 439-447. **DOI: 10.5562/cca3047;** festschrift issue, invited paper.

41. **Ilich, P.** Selected Problems in Physical Chemistry; Strategies and Interpretations. Springer, Heidelberg/Berlin: **2010, ISBN 978-3-642-04326-0**; eBook: http://www.springer.com/in/book/9783642043260 (accessed 15 Oct 2017)

40. **Ilich, P**.; McCormick K. R.; Atkins, A. D.; Mell, G. J.; Flaherty, T. J.; Bruck, M. J.; Goodrich, H.; A.; Hefel, A.; Juranic, N.; Seleem, S. Solvated Electrons in Organic Chemistry Laboratory. *J. Chem. Educ.;* **2010,** 87, 419-422. **DOI**: **10.1021/ed800093n**

39. **Ilich, P**.; Markovnikov's Rule. (Letter). *J. Chem. Educ*., **2007**, 87(4), 1109. **DOI: 10.1021/ed084p1109.2**

38. **Ilich, P.;** Rickertsen, L. S.; Becker, E. Polar Addition to C=C group: Why is Anti-Markovnikov Hydroboration / Oxidation not 'Anti'? *J. Chem. Educ.*, **2006**, 83, 1681-1685. **DOI: 10.1021/ed083p1681**

37. Hemann, C. F.; **Ilich, P.;** Stockert, A. L.; Choi, E-Y.; Hille, R. Resonance Raman Studies of Xanthine Oxidase: The Reduced Enzyme-Product Complex with Violapterin. *J. Phys. Chem. B*, **2005**, 109, 3023-3031. **DOI: 10.1021/jp046636k**

36. **Ilich, P.;** Juranić, N. One-bond $^{1}J_{NC'}$ nuclear spin-spin coupling in N-methylacetamide: a model for hydrogen-bonded peptides. *ChemPhysChem*, **2003**, 4, 1358-1360, **DOI**: **10.1002/cphc.200300647**

35. Streb, K. K.; **Ilich, P.** Acid-base equilibrium in lipid-water gels. *J. Chem. Educ.* **2003**, 80, 1464-1467. **DOI: 10.1021/ed080p1464**

34. Pressley, J.; **Ilich, P.;** Dougherty, D. A Contrast-Based Neural Control System for Ant Navigation. *Techn. Rep. # 5, Math. Biosci. Inst.*, Ohio State Univ., **2003**; URL: **https://mbi.osu.edu/files/8313/3528/0092/techreport_05.pdf** (accessed Jan 01, 2016)

33. Hemann, C. F.; **Ilich, P.;** Hille, R. Vibrational Spectra of Lumazine in Water and D_2O at pH 2 to 13. Ab Initio Calculations and FTIR/Raman Spectra. *J. Phys. Chem. B* **2003**, 107, 2139-2155. **DOI: 10.1021/jp026293v**

32. **Ilich, P.;** Hille, R. Oxo, Sulfido, and Tellurido Mo-enedithiolate Models for Xanthine Oxidase: Understanding the Basis of Enzyme Reactivity. *J. Am. Chem. Soc*. **2002**, 124, 6796-6797. **DOI: 10.1021/ja011957k**

31. **Ilich, P.;** Hille, R. Mechanism of Formamide Hydroxylation Catalyzed by a Molybdenum-Dithiolene Complex: A Model for Xanthine Oxidase Reactivity. *J. Phys. Chem. B* **1999**, 103, 5406-5412. **DOI: 10.1021/jp9904825**

30. Michaud, A. L.; Herrick, J. A.; Duplain, J. E.; Manson, J. L.; Hemann, C.; **Ilich, P.;** Donohoe, R. J.; Hille, R.; Oertling, W. A. FTIR characterization of heterocycles lumazine

and violapterin in solution: effects of solvent on anionic forms. *Biospectr.* **1998**, 4, 235-256. **DOI: 10.1002/(SICI)1520-6343(1998)4:4<235::AID-BSPY3>3.0.CO;2-1**

29. **Ilich, P.;** Hemann, C. F.; Hille, R. Molecular vibrations of solvated uracil. Ab initio reaction field calculations and experiment. *J. Phys. Chem. B* **1997**, 101, 10923-10938. **DOI: 10.1021/jp9706285**

28. **Ilich, P.;** Hille, R. Tautomerization of the substrate heterocycle in the course of the reaction of xanthine oxidase. *Inorg. Chim. Acta* **1997**, 263(1-2), 87-93. **doi:10.1016/S0020-1693(97)05654-5**

27. Xia, M.; **Ilich, P.;** Dempski, R.; Hille, R. Recent mechanistic studies of xanthine oxidase. *Biochem. Soc. Trans.* **1997**, 25(3), 768-773. **DOI: 10.1042/bst0250768**

26. **Ilich, P.;** Mishra, P. K.; Macura, S.; Burghardt, T. P. Direct observation of rhodamine dimer structures in water. *Spectrochim. Acta*, **1996**, 52A(10), 1323-1330. **doi:10.1016/0584-8539(96)01719-9**

25. Juranić, N.; **Ilich, P.;** Macura, S. Hydrogen Bonding Networks in Proteins As Revealed by the Amide $^{1}J_{NC'}$ Coupling Constant. *J. Am. Chem. Soc.* **1995**, 117, 405-410. **DOI: 10.1021/ja00106a046**

24. **Ilich, P.** 7-Azaindole: the low-temperature near-UV/vis spectra and electronic structure. *J. Mol. Struct.* **1995**, 354(1), 37-47. **doi: 10.1016/0022-2860(95)08856-Q**

23. **Ilich, P.;** Direct observation of acrylamide fluorescence. *Croat. Chem. Acta*, **1994**, 67(4), 447-453.

22. **Ilich, P.;** Sedarous, S. S. Indole in argon matrix: the near UV spectra. *Spectr. Lett.* **1994**, 27(8), 1023-1039. **DOI: 10.1080/00387019408006651**

21. Ajtai, K.; **Ilich, P.;** Ringler, A.; Sedarous, S. S.; Toft, D. J.; Burghardt, T. P. Stereospecific reaction of muscle fiber proteins with the 5' or 6' isomer of (iodoacetamido)tetramethylrhodamine. *Biochemistry* **1992**, 31, 12431-12440. **DOI: 10.1021/bi00164a019**

20. **Ilich, P.;** Prendergast, F. G. Protein-nucleic acid interactions. I. Electronic structures of cytosine, indole, and guanine complexes. *Biopolymers* **1992**, 32 (6), 667-694. **DOI: 10.1002/bip.360320609**

19. **Ilich, P.;** Prendergast, F. G. Electronic states of the indole-acrylamide molecular pair. *Photochem. Photobiol*. **1991**, 53(4), 445-453. **DOI:** 10.1111/j.1751-1097.1991.tb03655.x

18. **Ilich, P.;** Haydock, C.; Prendergast, F. G. Electronic transitions in hydrated indole: a MD INDO/S study. *Chem. Phys. Lett.* **1989**, 158 (1-2), 129-134. **doi:10.1016/0009-2614(89)87306-3**

17. **Ilich, P.;** Prendergast, F. G. Singlet adiabatic states of solvated PRODAN: a semiempirical molecular orbital study. *J. Phys. Chem.* **1989**, 93, 4441-4447. **DOI: 10.1021/j100348a014**

16. **Ilich, P.;** Axelsen, P. H.; Prendergast, F. G. Electronic transitions in molecules in static

external fields. I. Indole and Trp-59 in ribonuclease T1. *Biophys. Chem.* **1988**, 29(3), 341-349. **doi**:**10.1016/0301-4622(88)85056-7**

15. **Ilich, P.** Lowest singlet states in isolated indoles. *Can. J. Spectrosc.* **1987**, 32, 19-27.

14. **Ilich, P.** Combinatorial patterns in multiphoton spectroscopy. *Math. Chem. (MATCH)* **1986**, 19, 19-42.

13. Anderson, B. E.; Jones, R. D.; Rehms, A. A.; **Ilich, P.;** Callis, P. R. Polarized two-photon fluorescence excitation spectra of indole and benzimidazole. *Chem. Phys. Lett.* **1986**, 125 (2), 106-112. **doi:10.1016/0009-2614(86)85085-0**

12. **Ilic, P.;** Sinkovic, B.; Trinajstic, N. Molecular topology in excited states. T*HEOCHEM,* **1986**, 136(1-2), 155-164. **doi:10.1016/0166-1280(86)87070-1**

11. **Ilic, P.;** Trinajstic, N. Structural normalization of topological resonance energy. *Croat. Chem. Acta* **1983**, 56, 203-213.

10. **Ilic, P.;** Mohar, B.; Knop, J. V.; Juric, A.; Trinajstic, N. The topology and the aromaticity of coumarins. *J. Heterocycl. Chem.* **1982**, 19, 625-631. **DOI: 10.1002/jhet.5570190334**

09. **Ilic, P.** Topology of DNA structures. *Period. Biolog.* **1981**, 83, 146-150.

08. **Ilic, P.;** Trinajstic, N. On the topological resonance energy of porphins and related structures. *Croat. Chem. Acta* **1981**, 53, 591-599.

07. **Ilich, P.;** Juric, A.; Sinkovic, B.; Trinajstic, N. On the topological resonance energy of coumarin and its derivatives. *Croat Chem. Acta* **1981**, 53, 587-590.

06. **Ilic, P.;** Trinajstic, N. Nonclassical aromaticity. Aromaticity of conjugated ions. *Kem. Ind.* **1980**, 29, 417-423

05. **Ilic, P.;** Sinkovic, B.; Trinajstic, N. Topological resonance energies of conjugated structures. *Israel. J. Chem.* **1980**, 20, 258-269. **DOI**: **10.1002/ijch.198000081**

04. **Ilic, P.;** Trinajstic, N. Topological resonance energy approach to homoaromaticity. *Pure Appl. Chem.* **1980**, 52, 1495-1508**. http://dx.doi.org/10.1351/pac198052061495**

03. **Ilic, P.;** Trinastic, N. Topological resonance energies of conjugated ions, radicals, and ion radicals. *J. Org. Chem.* **1980**, 45, 1738-1748. **DOI: 10.1021/jo01298a002**

02. **Ilic, P.;** Trinajstic, N. On normalization of topological resonance energy. *Croat. Chem. Acta.* **1979**, 52, 35-42

01. Sislov, V.; Sutic, D.; **Ilich, P.** Base catalyzed hydrolysis of o-nitrophenyl acetate in a mixed dimethyl sulfoxide-water system. *Bull. Chem. Engineer. Bosnia & Herzeg.* (*Glas. Hem. Tehnol. Bosne Herceg.*) **1972**, 19-20, 79-88