

# Curriculum Vitae

*Andrey A. Fokin*

## a. Date and place of birth

June 20, 1960, Kiev, USSR

## b. Affiliation and official address

National Technical University of Ukraine "Kiev Polytechnic Institute",  
Department of Organic Chemistry, 37 Pobeda Ave., Kiev 03056, Ukraine

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## c. Citizenships

Ukraine

## d. Education

1982 MS, Kiev Polytechnic Institute

1985 Candidate of Chemical Sciences, Kiev Polytechnic Institute

1995 Doctor of Chemical Sciences, Kiev Polytechnic Institute

## e. Career/Employment

1977–1982 Student, Kiev Polytechnic Institute

1982–1985 Post. Grad. Stud., Kiev Polytechnic Institute

1985–1992 Sen. Res. Associate, Head of Research Group, Kiev Polytechnic Institute

1992–1995 Associate Professor, Kiev Polytechnic Institute

1995–date Professor, Kiev Polytechnic Institute

2009–date Department Head, Kiev Polytechnic Institute

## f. Specialization

**Main field:** Organic Chemistry

**Other fields:** Computational chemistry, chemical technology

**Current research interests:** 1) hydrocarbon chemistry, 2) carbon nanomaterials and nanoelectronics, 3) alkane activations mechanisms, 4) none-covalent interactions, 5) chemistry of ylides, 6) carbene chemistry, 7) organic electrochemistry, 8) aromaticity, 9) antivirals and antimalarials, 10) pesticide chemistry, 11) green chemistry and technology

## g. Teaching (Lecture Courses, ca. 150 acad. hr. per year for Chemistry Majors)

1) Introduction to stereochemistry and group theory, 2) Kinetics and thermodynamics, 3) Theory of chemical processes, 4) Computational chemistry, 5) Reaction intermediates in chemistry

## e. Fellowships

1986 Ukrainian Academy of Science Prize for Young Scientists (Ukraine)

1996 DAAD (German Academic Exchange Program) Research Fellowship (Germany)

1997 CRDF (Civilian Research and Development Foundation) Research Fellowship (USA)

1997–1999 Alexander von Humboldt Research Fellowship (Germany)

## f. Professorships

1997 University of Minnesota, USA

1996, 1998 University Erlangen-Nürnberg, Germany

2000, 2001 Göttingen University, Germany

2001 University of Georgia, USA

2009 Giessen University, Germany

## g. PhD Dissertations Supervised

**Defended:** 12

**In preparation:** 4

## h. Citation Statistics (as of September 20, 2017, ISI Web of Knowledge)

H-index – 33; Citations: total 3.386; average per item: 24.4; among 50 most cited Ukrainian scientists in all fields

## i. Publications (as of September 20, 2017)

Books and book chapters: 14



Papers in peer review journals: 143

Patents: 16

Talks (published): 159

#### j. Recent Selected Publications in Peer-Review Journals (2013–2017)

1. Sklyarova, A. S.; Rodionov, V. N.; Parsons, C. G.; Quack, G.; Schreiner, P. R.; Fokin, A. A. Preparation and testing of homocubyl amines as therapeutic NMDA receptor antagonists. *Med. Chem. Res.* **2013**, *22*, 360.
2. Fokin, A. A.; Butova, E. D.; Barabash, A. V.; Huu, N. N.; Tkachenko, B. A.; Fokina, N. A.; Schreiner, P. R. Preparative synthesis of vinyl diamondoids. *Synth. Comm.* **2013**, *43*, 1772.
3. Li, F. H.; Fabbri, J. D.; Yurchenko, R. I.; Mileshekin, A. N.; Hohman, J. N.; Yan, H.; Yuan, H.; Tran, I. C.; Willey, T. M.; Bagge-Hansen, M.; Dahl, J. E. P.; Carlson, R. M. K.; Fokin, A. A.; Schreiner, P. R.; Shen, Z.-X.; Melosh, N. A. Covalent attachment of diamondoid phosphonic acid dichlorides to tungsten oxide surfaces. *Langmuir*, **2013**, *29*, 9790.
4. Mishura, A. M.; Sklyarova, A. S.; Sharapa, D. I.; Levandovsky, I. A.; Serafin, M.; Fokin, A. A.; Rodionov, V. N. Stereoselective Preparation of mono- and bis-derivatives of pentacyclo[6.3.0.0<sup>2,6</sup>.0<sup>3,10</sup>.0<sup>5,9</sup>]undecane (*D*<sub>3</sub>-trishomocubane). *Cent. Eur. J. Chem.* **2013**, *11*, 2144.
5. Kacharov, A. D.; Yemets, S. V.; Nemykin, V. N.; Kacharova, L. M.; Fokin, A. A.; Krasutsky, P. A. Stereoselectivity of A-ring contraction for 3-oxotriterpenoids. *RCS Advances*, **2013**, *3*, 19057.
6. Chekanov, M. O.; Ostrynska, O. V.; Tarnavskiy, S. S.; Synyugin, A. R.; Briukhovetska, N. V.; Bdzhola, V. G.; Pashenko, A. E.; Fokin, A. A.; Yarmoluk, S. M. Design, synthesis and biological evaluation of 2-aminopyrimidinones and their 6-aza-analogs as a new class of CK2 inhibitors. *J. Enz. Inhib. Med. Chem.* **2014**, *29*, 5, 639.
7. Kahl, P.; Tkachenko, B. A.; Novikovskiy, A. A.; Backer, J.; Dahl, J. E. P.; Carlson, R. M. K.; Fokin, A. A.; Schreiner, P. R. Efficient preparation of alicyclic substituted diamondoid derivatives, *Synthesis*, **2014**, *46*, 787.
8. Thomsen, C.; Maultzsch, J. UV resonance Raman analysis of trishomocubane and diamondoid dimers. *J. Chem. Phys.* **2014**, *140*, 034309.
9. Fokin, A. A.; Zhuk, T. S.; Pashenko, A. E.; Osipov, V. V.; Gunchenko, P. A.; Serafin, M.; Schreiner, P. R. Functionalization of homodiamantane: Oxygen insertion reactions without rearrangement with dimethyldioxirane. *J. Org. Chem.* **2014**, *79*, 1861.
10. Fokin, A. A.; Yurchenko, R. I.; Tkachenko, B. A.; Fokina, N. A.; Gunawan, M. A.; Poinot, D.; Dahl, J. E. P.; Carlson, R. M. K.; Serafin, M.; Cattet, H.; Hierso, J.-C.; Schreiner, P. R. Selective preparation of diamondoid phosphonates. *J. Org. Chem.* **2014**, *79*, 5369.
11. Ponomarenko, M. V.; Serguchev, Yu. A.; Hirschberg, M. E.; Rösenthaller, G.-V.; Fokin, A. A. Elemental F<sub>2</sub> with transannular dienes: Regioselectivities and mechanisms. *Chem. Eur. J.* **2014**, *20*, 10383.
12. Randel, J. C.; Niestemski, F. C.; Botello-Mendez, A. R.; Mar, W.; Ndabashimiye, G.; Melinte, S.; Dahl, J. E. P.; Carlson, R. M. K.; Butova, E. D.; Fokin, A. A.; Schreiner, P. R.; Charlier, J.-C.; Manoharan, H. C. Unconventional molecule-resolved current rectification in diamondoid fullerene hybrids. *Nature Comm.* **2014**, *5*, 4877.
13. Barabash, A. V.; Butova, E. D.; Kanyuk, I. M.; Schreiner, P. R.; Fokin, A. A. Beyond the Corey reaction II: Dimethylenation of sterically congested ketones. *J. Org. Chem.* **2014**, *79*, 10669.
14. Gunawan, M. A.; Poinot, D.; Domenichini, B.; Dirand, C.; Chevalier, S.; Fokin, A. A.; Schreiner, P. R.; Hierso, J.-P. The functionalization of nanodiamonds (*diamondoids*) as a key parameter of their easily controlled self-assembly in micro- and nanocrystals from the vapor phase. *Nanoscale*, **2015**, *7*, 1956–1962.
15. Zhuk, T. S.; Koso, T.; Pashenko, A. E.; Hoc, N. T.; Rodionov, V. N.; Serafin, M.; Schreiner, P. R.; Fokin, A. A. Toward an understanding of diamond sp<sup>2</sup>-defects with unsaturated diamondoid oligomer model. *J. Am. Chem. Soc.* **2015**, *137*, 6577–6586.
16. Bremer, M.; Untenecker, H.; Gunchenko, P. A.; Fokin, A. A.; Schreiner, P. R. Inverted carbon geometries: Challenges to experiment and theory. *J. Org. Chem.* **2015**, *80*, 6520–6524.
17. Valentin, L.; Henss, A.; Tkachenko, B. A.; Fokin, A. A.; Schreiner, P. R.; Becker, S.; Würtele, C.; Schindler, S. Transition metal complexes with cage-opened diamondoid tetracyclo[7.3.1.1<sup>4,12</sup>.0<sup>2,7</sup>]tetradeca-6.11-diene. *J. Coord. Chem.* **2015**, *68*, 3295–3301.
18. Zhang, J. L.; Ishiwata, H.; Babinec, T. M.; Radulaski, M.; Müller, K.; Lagoudakis, K. G.; Dory, C.; Dahl, J.; Edgington, R.; Soulière, V.; Ferro, G.; Fokin, A. A.; Schreiner, P. R.; Shen, Z.-X.; Melosh, N.; Vuckovic, J. Hybrid Group IV Nanophotonic structures incorporating diamond silicon-vacancy color centers. *Nano Lett.* **2016**, *16*, 212–217.
19. Karthik, T. N.; Ge, C.; Fabbri, J. D.; Clay, W.; Tkachenko, B. A.; Fokin, A. A.; Schreiner, P. R.; Dahl, J. E.; Carlson, R. M. K.; Shen, Z. X.; Melosh, N. A. Ultra-low effective work function surfaces using diamondoid monolayers. *Nature Nanotech.* **2016**, *11*, 267–273.
20. Yan, H.; Hohman, J. N.; Li, F. H.; Jia, C.; Solis-Ibarra, D.; Wu, B.; Dahl, J. E. P.; Carlson, R. M. K.; Tkachenko, B. A.; Fokin, A. A.; Schreiner, P. R.; Vailionis, A.; Kim, T. R.; Devereaux, T. P.; Shen, Z.-X.; Melosh, N. A. Hybrid metal–organic chalcogenide nanowires with electrically conductive inorganic core through diamondoid-directed assembly. *Nat. Mater.* **2017**, *16*, 349–355.
21. Fokin, A. A.; Pashenko, A. E.; Bakhonsky, V. V.; Zhuk, T. S.; Chernish, L. V.; Gunchenko, P. A.; Kushko, A. O.; Becker, J.; Wende, R. C.; Schreiner, P. R. Chiral building blocks based on 1,2-disubstituted diamantanes. *Synthesis*, **2017**, *49*, 2003–2008.
22. Tyborski, C.; Meinke, R.; Gillen, R.; Bischoff, T.; Knecht, A.; Richter, R.; Merli, A.; Fokin, A. A.; Koso, T. V.; Rodionov, V. N. Schreiner, P. R.; Moller, T.; Rander, T.; Thomsen, C.; Maultzsch, J. From isolated diamondoids to a van der-Waals crystal: A theoretical and experimental analysis of a trishomocubane and a diamantane dimer in the gas and solid phase. *J. Chem. Phys.* **2017**, *147*, 4, 044303 (6 p.)