

**Dr. Oleksandr Zhurakovskiy**  
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Synthetic organic chemist with 6 years of experience in reaction methodology, total synthesis and academic drug R&D. Experienced in programming.

### Education

DPhil, Organic Chemistry University of Oxford, Oxford, UK Thesis: <i>Pericyclic and related rearrangements for the synthesis of nitrogen heterocyclic ring systems</i>	Feb 2014
MS, Chemistry University of Arizona, Tucson, AZ, USA Thesis: <i>Novel dual Lewis acid – Lewis base binders as potential hydrogen and carbonyl activators</i>	May 2010
MS, Chemistry (cum laude) Dnipropetrovsk National University, Dnipropetrovsk, Ukraine Thesis: <i>Heterocyclic systems based on amino acids derivatives. Synthesis and reactivity</i>	Jun 2008
BS, Chemistry (cum laude) Dnipropetrovsk National University, Dnipropetrovsk, Ukraine Thesis: <i>Diacyl amino acids derived from natural amino acids. Synthesis and reactivity</i>	Jun 2007

### Research Experience

Organic synthesis on scales ranging from sub-mg to decagrams of substrate. Oxygen- and water-free chemistry, including work in glove box. Experienced in alkylations with organometallic reagents, multistep syntheses (up to 15 linear steps), flow- and microwave reactions, preparative HPLC. Computational chemistry. Cell culturing and fluorescence microscopy imaging.

2015–present	<b>Postdoctoral research associate, Varinder K. Aggarwal lab, University of Bristol:</b> total synthesis of $\alpha$ -cyclopiazonic acid. Designed and executed multiple synthetic strategies, balancing the reactivity and stability of various intermediates. Developed an enantioselective route to the natural product that has challenged the lab for the past 17 years.
2014–2015	<b>Postdoctoral researcher, Andrew Myers lab, Harvard University:</b> anticancer drug development – synthesis of fully synthetic trioxacarin analogs and their antibody-drug conjugates (in collaboration with Pfizer and Genentech). Synthesized over 25 trioxacarin analogs, some of which had $IC_{50} < 10$ nM in vitro. Developed drug-linker conjugates with greatly improved stability.
2010–2014	<b>Doctoral student, Jeremy Robertson lab, University of Oxford:</b> single-handedly synthesized a series of elaborated allene azides and studied cascade rearrangements thereof, prepared radianspene J model system to test the newly developed methodology
2009–2010	<b>Master's student, Hamish Christie lab, University of Arizona:</b> studied chemistry of boron-nitrogen compounds, synthesized dual Lewis acid – Lewis base bifunctional compounds
2007–2008	<b>Master's student, Igor Tarabara lab, Dnipropetrovsk National University:</b> synthesis of polycyclic compounds from easily available amino acids
2004–2007	<b>Undergraduate research student, Liliya Kasyan lab, Dnipropetrovsk National University:</b> synthesis of amino acids derivatives containing a bicyclic subunit

### Skills

Chemistry	Total synthesis, organic methodology, multistep synthesis (1 mg to 10 g), microscale synthesis and purification (<2 mg), flash chromatography (manual, Biotage, Teledyne Isco), prep-HPLC (Agilent, Waters), recrystallization, distillation
Analysis	NMR, qNMR, IR, HPLC (reverse phase, normal phase, chiral), LCMS, GCMS, SFC, fluorescence microscopy
Biology	Cell culturing
Languages	English – fluent, Russian – native, Ukrainian – native, German – basic
Computer	Programming and data analysis (Python, R), web development (PHP, MySQL, HTML), Microsoft Office, Adobe Photoshop, ChemOffice, Tableau
Other	Mentoring, teaching, collaborative work, leadership, public speaking.

### Awards

2011	OxTALENT award
2010–2013	Clarendon Scholarship
2008–2010	Fulbright Graduate Student Exchange Program scholarship
2008	Best Report, First All-Ukrainian Conference for Undergraduate and Postgraduate Students <i>Modern Technologies in Chemical and Food Industries</i>
2007	Victor Pinchuk Foundation scholarship ZAVTRA.UA
2007	1 <sup>st</sup> place, All-Ukrainian undergraduate scientific works contest
2006–2007	Ukrainian Government Scholarship
2006	President of Ukraine Scholarship for outstanding students

### Personal Projects

- Chemistry Reference Resolver, <http://chemsearch.kovsky.net>: a tool for quick reference retrieval (highlighted in *Nat. Chem.* **2011**, 3, 655; highlighted in the NOS-2013 book of abstracts)
- Robertson Lab Inventory, online resource

### Peer Review

2013–present	Editor, Bulletin of Dnipropetrovsk National University, Series Chemistry
2011–present	Reviewer, Fulbright Ukraine

### Mentoring and Teaching

2016	Supervised a visiting undergraduate student for 6 months, giving him theoretical and practical knowledge of total synthesis
2013	Demonstrator, 2 <sup>nd</sup> –3 <sup>rd</sup> year undergraduate organic chemistry lab, University of Oxford: co-supervising 10–25 students per session, marking lab reports
2010	TA, University of Arizona: supervising 24 undergraduate students, developing pre-lab lectures, grading reports and exams
2009–present	Delivered various presentations and webinars as listed on <a href="http://kovsky.net/presentations.php">http://kovsky.net/presentations.php</a>

### Publications

1. O. Zhurakovskiy, Y. E. Türkmen, L. E. Löffler, V. A. Moorthie, C. C. Chen, M. A. Shaw, M. R. Crimmin, M. Ferrara, M. Ahmad, M. Ostovar, J. V. Matlock, V. K. Aggarwal, Enantioselective Synthesis of the Cyclopiazonic Acid Family Using Sulfur Ylides, *Angew. Chem. Int. Ed.*, **2018**, 57, 1346–1350 [Hot Paper][Featured in Chemistry By Design]

2. Zhurakovskiy, O., Palchykov, V., Synthesis of *N,O,S*-heterocycles by one-pot reactions of epoxides, aziridines and oxaziridines, in *Advances in Organic Synthesis* [Invited Review], *Submitted*.
3. Zhurakovskiy, O., Ellis, S. R., Thompson, A. L., Robertson, J. Access to a Guanacastepene and Cortistatin-Related Skeleton via Ethynyl Lactone Ireland–Claisen Rearrangement and Transannular (4+3)-Cycloaddition of an Azatrimethylenemethane Diyl, *Org. Lett.*, **2017**, *19*, 2174–2177.
4. Okovytyy, S. I., Zhurakovskiy, O. Stereochemistry of the epoxidation of bicycle[2.2.1]hept-2-ene and its 7-*syn*-substituted derivatives. A DFT study, *Bull. Dnipropetrovsk Univ. Chem.*, **2014**, *22*, 52.
5. Zhurakovskiy, O, Robertson, J. Versatile Chemistry of Tethered Allene Azides. *Abstracts of the RSC Organic Division Poster Symposium*, **2012**
6. Zhurakovskiy, O, Robertson, J. Pericyclic rearrangements of tethered allene azides. *Abstracts of Papers, 243rd ACS National Meeting & Exposition*, **2012**
7. Zhurakovskiy, O. Chemistry Reference Resolver: A tool to simplify reference retrieval. *Abstracts of Papers, 243rd ACS National Meeting & Exposition*, **2012**
8. [Book translation: ch. 2–4] Korobov V. I., Ochkov V. F. Chemical Kinetics with Mathcad and Maple, Springer-Verlag: Wien, **2011**.
9. Zhurakovskiy, O.A.; Tarabara, I.N. New epoxide derivatives of endic anhydride and its condensation products with amino acids. *Dnipropetrovsk National University bulletin*, **2008**
10. Zhurakovskiy, O.A.; Tarabara, I.N. Reduction of amides of caged imidocarboxylic acids with NaBH<sub>4</sub>/MeOH – THF system. *Abstracts of the Sixth All-Ukrainian Young Scientists and Students Conference on Current Problems in Chemistry*, Kharkiv, Ukraine, June 3–6, **2008**; p. 102.
11. Tarabara, I.N.; Bondarenko, Ya.S.; Zhurakovskii, A.A.; Kasyan, L.I. New derivatives of 2-(3,5-Dioxo-4-azatricyclo[5.2.1.0<sup>2,6</sup>-endo]]dec-8-en-4-yl)acetic Acid. Synthesis and reactivity. *Russian Journal of Organic Chemistry*, **2007**, *9*, 1297–1304.
12. Tarabara, I.N.; Bondarenko, Ya.S.; Zhurakovskiy, O.A.; Bondarenko, A.V.; Kasyan, L.I. Synthesis and transformations of new derivatives of 2-(3,5-dioxo-4-azatricyclo[5.2.1.0<sup>2,6</sup>-endo]]dec-8-ene-4-yl)pentanedioic acid. *Voprosy khimii i khimicheskoy tekhnologii (Problems of Chemistry and Chemical Technology)*, **2006**, *4*, 42-46.
13. Zhurakovskiy, O.; Bondarenko, Ya.; Tarabara, I.; Kasyan, L. Unusual epoxidation reaction of norbornene-derived amino acids. *Abstracts of the International Symposium on Advanced Science in Organic Chemistry*, Sudak, Ukraine, June 26-30, **2006**; p. C-057.
14. Zhurakovskiy, O.; Makarov, A.; Shevchenko, L.; Tsokur, N. Development of sodium ethylenediaminetetraacetatoferrate(III) synthesis. *Abstracts of the Second All-Ukrainian Young Scientists and Students Conference on Current Trends in Chemistry*, Dnipropetrovsk, Ukraine, May 7-12, **2004**; p. 106

### References

- Prof. Varinder K. Aggarwal, University of Bristol, v.aggarwal@bristol.ac.uk, +44-117-954-6315
- Prof. Andrew Myers, Harvard University, myers@chemistry.harvard.edu, +1-617-495-5718
- Prof. Jeremy Robertson, University of Oxford, jeremy.robertson@chem.ox.ac.uk, +44-1865-275660