

## PERSONAL INFORMATION

**Sebastian Piotr Baś**

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Sex male | Date of birth 30/12/1986 | Nationality Polish

## WORK EXPERIENCE

- from 11.2020 scientific researcher at The Institute of Organic Chemistry PAN in Warsaw in prof. Bartosz Grzybowski group
- from 10.2019 assistant professor of Faculty of Chemistry at Jagiellonian University
- from 05.2018 to 10.2019 scientific researcher at The University of Tokyo in prof. Shu Kobayashi group (post-doc)
- from 10.2017 to 05.2018 assistant professor of Faculty of Chemistry at Jagiellonian University
- from 02.2015 to 09.2017 scientific assistant at Jagiellonian University in prof. Jacek Młynarski group
- from 02.2016 permanent vsiting pofessor of Institut de Chimie Organique et Analytique I.C.O.A. l'Universite d'Orleans, Orleans, France – Erasmus+ project
- in 10.2017 vsiting pofessor of Saint. Petersburg State University, St. Petersburg, Russia
- in 04.2018 vsiting pofessor of Ivane Javakhishvili Tbilisi State University

## EDUCATION AND TRAINING

- from 2005 to 2010 undergraduate studies at Jagiellonian University, Faculty of Chemistry with specialization Modern synthesis and organic physicochemistry - topic of master thesis: "Application of hydroxyketones for asymmetric synthesis of chosen natural products: (+)-boronolide" – promoter prof. dr hab. Jacek Młynarski
- from 2008 to 2011 engineer studies at University of Science and Technology (AGH), Faculty of Material Science and Ceramics with specialization Analytical Chemistry - topic of engineer thesis "Overview of analytical determination of uranium and thorium" – promoter dr hab. inż.

Robert Piech

from 2010 to 2014 PhD studies at Jagiellonian University, Faculty of Chemistry, topic of PhD thesis  
 “Enantio- and diastereoselective reactions of hydroxyketones with aldehydes catalysed by tertiary amines” – promoter prof. dr hab. Jacek Młynarski

Mother tongue(s) Polish

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2/C1	B2/C1	B2/C1	B2/C1	B2/C1
German	A1/A2	A1/A2	A1/A2	A1/A2	A1/A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

## PERSONAL SKILLS

### other research experience

- from 2007 to 2008 - work in MAGMAnet project under supervision of prof. Barbara Sieklucka – development of new kind molecular-magnet switch based on bimetal cluster complexes.
- from 2008 to 2009 –work at *Ventures* project “Synthesis and biological evaluation of new agonists of cannabinoid receptors” - supervisor mgr. Przemysław Szafranski – synthesis of designed agonist for CB<sub>1</sub> and CB<sub>2</sub> cannabinoid receptors
- from 2013 cooperation with prof. Wyska's group from Faculty of Pharmacy at Jagiellonian University – synthesis of molecules: Lisofylline and Z-VAD-FMK for further biological activity investigation
- from 20.10.2014 to 31.12.2014 contract work for prof. Jacek Młynarski — large scale substrate synthesis for project “Lesson from Nature, pyruvic acid esters in asymmetric synthesis”
- from 04.2016 cooperation with prof. Stefan Chłopicki research group from Jagiellonian Centre for Experimental Therapeutics - development of the synthetic pathway of biologically active compounds like RO 3244794, COP-1 or 5-amino-1-QM and their preparation according to proposed synthetic procedure

## scientific skills

- from 2016 cooperation with prof. Kaminski's group from Faculty of Pharmacy at Jagiellonian University – optical purity control of biologically active molecules
- from 26.11.2016 contract with Wiley-VCH Verlag GmbH & Co. KGaA for a book chapter on the subject of "Zinc-based chiral Lewis acids"
- knowledge of advance and modern methods in synthetic chemistry
- extensive knowledge in the field of organocatalysis and photochemistry
- high experience in asymmetric synthesis of optically pure compounds
- practise in asymmetric catalysis, photocatalysis and flow systems
- practice in total synthesis
- experience in NMR, MS, HRMS and IR techniques

## job-related skills

- ability to use various analytical equipment such as JEOL and Bruker spectrometers, Shimadzu UPLC-MS, HPLC, IR equipment
- ChemBioOffice, ChemSketch, MatLab software knowledge
- Spin Works, Mestrec, Mestrenova analytical software knowledge
- basic of C90 and Fortran programming language knowledge
- ability to work in group and high communication skills
- experience in ordering and utilization of different organic substances

## ADDITIONAL INFORMATION

## Publications

1. S. Baś, Y. Yamashita, S. Kobayashi, „Development of Brønsted Base–Photocatalyst Hybrid Systems for Highly Efficient C–C Bond Formation Reactions of Malonates with Styrenes” *ACS Catalysis*, **2020**, *10*, 10546-10550
2. A. Świerczek, K. Pocięcha, M. Ślusarczyk, G. Chłoń-Rzepa, S. Baś, J. Młynarski, K. Więckowski, M. Zadrożna, B. Nowak, E. Wyska, “Comparative Assessment of the New PDE7 Inhibitor–GRMS-55 and Lisofylline in Animal Models of Immune-Related Disorders: A PK/PD Modeling Approach”, *Pharmaceutical research*, **2020**, *37*, 1-21
3. M Pasternak-Suder, W Pacułt, S Baś, J Młynarski, “Asymmetric Aldol Reaction of Pyruvate Promoted by Chiral Tertiary Amines”, *ChemistrySelect*, **2020**, *5*,

7370-7374

4. A. Świerczek, E., Wyska, K., Pocięcha, S., Baś, J., Mlynarski, "Influence of inflammatory disorders on pharmacokinetics of lisofylline in rats: implications for studies in humans" *Xenobiotica*, **2019**, *49*, 1209-1220
5. S. Baś, \* R. Kusy, M. Pasternak-Suder, C. Nicolas, J. Mlynarski, O. R. Martin „Total Synthesis of Pipecolic Acid and 1-C-Alkyl 1,5-Iminopentitol Derivatives by way of Stereoselective Aldol Reactions from (S)-Isoserinal" *Org. Biomol. Chem.* **2018**, *16*, 1118.
6. M. Abram, M. Zagaja, S. Mogilski, M. Andres-Mach, G. Latacz, S. Baś, J. J. Łuszczki, K. Kieć-Kononowicz, K. Kamiński „Multifunctional Hybrid Compounds Derived from 2-(2,5-Dioxopyrrolidin-1-yl)-3-methoxypropanamides with Anticonvulsant and Antinociceptive Properties" *J. Med. Chem.* **2017**, *60*, 8565.
7. A. Świerczek, E. Wyska, S. Baś, M. Woyciechowska, J. Mlynarski, "PK/PD studies on non-selective PDE inhibitors in rats using cAMP as marker of pharmacological response" *Naunyn-Schmiedeberg's Arch. Pharmacol.* **2017**, *390*, 1047.
8. S. Baś, J. Mlynarski, „Synthesis of 2-Keto-D- and L-Gluconic Acid via Stereoselective Direct Aldol Reactions" *J. Org. Chem.* **2016**, *81*, 6112.
9. M. A. Molenda, S. Baś, J. Mlynarski, „A Concise Organocatalytic Synthesis of 3-deoxy-2-Ulosonic Acids via Cinchona Alkaloid-Promoted Aldol Reaction of Pyruvate" *Eur. J. Org. Chem.* **2016**, 4394.
10. O. Popik, M. Pasternak-Suder, S. Baś, J. Mlynarski, „Organocatalytic Synthesis of Higher-carbon Sugars: Efficient Protocols for the Synthesis of Natural Seduheptulose and D-glycero-L-galacto-oct-2-ulose" *ChemistryOpen* **2015**, *4*, 717.
11. M. Molenda, S. Baś, O. El-Sepelgy, M. Stefaniak, J. Mlynarski, „Chemistry of Pyruvate Enolates: *anti*-selective Direct Aldol Reaction of Pyruvate Ester with Chiral Aldehydes Promoted by Dinuclear Zinc Catalyst" *Adv. Synth. Catal.* **2015**, *357*, 2098.
12. D. Łowicki, S. Baś, J. Mlynarski, „Chiral Zinc Catalysts for Asymmetric Synthesis" *Tetrahedron* **2015** *71* 1339.
13. J. Mlynarski, S. Baś „Catalytic Asymmetric Aldol Reaction in Aqueous Media - 5 Years Update" *Chem. Soc. Rev.*, **2013**, *43*, 577.
14. S. Baś, Ł. Woźniak, J. Cygan, J. Mlynarski „Asymmetric *syn*-Aldol Reaction of  $\alpha$ -Hydroxyketones via Tertiary Amine Catalysts" *Eur. J. Org. Chem.*, **2013**, 6917.
15. R. Piech, A. Bugajna, S. Baś, W. W. Kubiak, „Ultrasensitive determination of tungsten(VI) on pikomolar level In voltammetric catalytic catechol-chlorate(V) system", *J. Electroanal. Chem.*, **2010**, *644*, 74.
16. B. Baś, S. Baś, "Rapidly renewable silver amalgam annular band electrode for voltammetry and polarography", *Electrochem. Commun.*, **2010**, *12*, 816.

H index: **8** Citation: **280** (according to Scopus)

Book chapters

1. S. Baś, M. Szewczyk, J. Młynarski „Zinc-based Chirac Lewis acids” in „Chirac Lewis Acids in Organic Synthesis” Jacek Młynarski (Ed.) Wiley-VCH, Weinheim, 2017, p 137-181.

Patents

2. B. Baś, R. Piech, S. Baś, patent **PL 213750 B1** title: "Renewable, cylindrical, amalgam electrode for electrochemical measurements, especially voltammetric, polarographic and tensametric"
3. M. Szewczyk, A. Beziada, S. Baś, J. Młynarski patent **P.417890** title „Method of asymmetric reduction of prochiral ketones”

Projects

1. from 2010 to 2014 PhD student in project TEAM nr TEAM/2010-5/7 *biomimetic asymmetric carbon-carbon bond formation catalysts design and application* - supervisor: prof. dr hab. Jacek Młynarski.
2. from 2015 post-doc position in project MAESTRO nr UMO-2013/10/A/ST5/00233 “The lesson from nature: esters of pyruvic acid in asymmetric synthesis” - supervisor: prof. dr hab. Jacek Młynarski.
3. in 2016 employed in international project HARMONIA nr UMO-2013/08/M/NZ7/01034 “Studies on antiplatelet and antithrombotic activity of CO-releasing molecules (CO-RM)” - - supervisor: prof. dr hab. Stefan Chłopicki
4. from 23.11.2017 to 22.11.2018, coordinator of own research grant MINIATURA1 nr DEC-2017/01/X/ST5/01122 “Total synthesis of Castanospermine analogues via asymmetric aldol reaction of isoserylaldehyde”

Conferences

Attendance at 16 conferences including 7 international and 9 national conferences. Results were presented as poster form at 11 conferences and five times as oral presentation (two of them were awarded as best PhD presentation).

## Honours and awards

1. Scholarship of Polish Ministry of Science and Education for undergraduate students for achievements in science at University of Science and Technology AGH
2. Scholarship „DOCTUS – Małopolski fundusz stypendialny dla doktorantów” nr ZS.4112-88/11 from 2012 to 2014 for PhD students
3. Faculty of Chemistry award for publication: J. Mlynarski, S. Baś „Catalytic Asymmetric Aldol Reaction in Aqueous Media - 5 Years Update” *Chem. Soc. Rev.*, **2013**, 43, 577
4. Article „Total Synthesis of Pipecolic Acid and 1-C-Alkyl 1,5-Iminopentitol Derivatives by way of Stereoselective Aldol Reactions from (S)-Isoserinal” *Org. Biomol. Chem.* **2018**, 16, 1118 highlighted by Organic Chemistry Portal - D. F. Taber, *Org. Chem. Highlights* **2019**, February 25. (<https://www.organic-chemistry.org/Highlights/2019/25February.shtm>)

## References

- Jacek Mlynarski (Jagiellonian University) - [jacek.mlynarski@gmail.com](mailto:jacek.mlynarski@gmail.com)
- Olivier Martin (l'Universite d'Orleans) - [olivier.martin@univ-orleans.fr](mailto:olivier.martin@univ-orleans.fr)
- Shu Kobayashi (The University of Tokyo) - [shu\\_kobayashi@chem.s.u-tokyo.ac.jp](mailto:shu_kobayashi@chem.s.u-tokyo.ac.jp)