

# Curriculum Vitae

Name, Family Name: **Maris TURKS**

ORCID: <https://orcid.org/0000-0001-5227-0369>

## EDUCATION

- 2000-2005 PhD in organic chemistry. Swiss Federal Institute of Technology, Lausanne (EPFL), Switzerland, with Prof. Pierre Vogel
- 2006 Postdoctoral fellow, Stanford University, California, USA, with Prof. Barry M. Trost

## POSITIONS

- 2024-present Dean, Faculty of Natural Sciences and Technology, Riga Technical University, Riga, Latvia
- 2012-present Full professor, Riga Technical University, Riga, Latvia
- 2010-2023 Director of the Institute of Technology of Organic Chemistry, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Riga, Latvia
- 2007-2012 Docent → associate professor, RTU, Riga, Latvia

## PROJECTS for the previous 6 years (2018-2024)

- 1,2-Silyl shift in propargyl silanes as novel methodology for synthesis of pharmaceutically important heterocycles and substituted olefins. Latvian Council of Science (LCS) grant N# LZP-2023/1-0576, 2024-2026, 300'000 EUR, Head of the project.
- Baltic-German twinning for research on energetic heterocycles, Baltic-German University Liaison Office Mobility program 2024 between Riga Technical University, Ludwig Maximilian University of Munich and Vilnius University, Head of the Project.
- Molecular electronics in functionalized purines: fundamental study and applications (MEPS). Latvian Council of Science international grant with Lithuania and Taiwan partners # LV-LT-TW/2022/9, 2022-2024, 225'000 EUR, Head of the Latvian team.
- State Research programme project in biomedical, medical technologies and pharmaceuticals: BioMedPharm 2023-2024 (5'700'000 EUR), Coordinator of Riga Technical University 5 work packages, 527'000 EUR, Co-Head of WP6 "Development of local drug delivery systems based on personalized 3D biomaterial implants".
- Development of energetic azidopurines and their congeners, Baltic-German University Liaison Office Mobility program 2023 between Riga Technical University and Ludwig Maximilian University of Munich, Head of the Project.
- Development of pentacyclic triterpenoid – azole conjugates: from cancer chemopreventive agents and adjuvants in cancer chemotherapy to novel anti-cancer drug candidates. ERA.NET RUS Plus project N# RUS\_ST2017-139, 2018-2021, 493'500 EUR, Head of the project.
- Development of new therapeutic and prophylactic agents against COVID-19 and coronaviruses (PI: Prof. Kaspars Tārs). Latvian Council of Science Nacional Anti-Covid-19 Program project #Y4360, 2020, 48'790 EUR, Head of the Subproject.
- Synthesis and antiviral activity of semisynthetic derivatives of biorenewable triterpenoids. State Education Development Agency (SEDA) project N# W4204, 2019-2021, 40'000 EUR, Head of the project.
- Synthetic methodologies towards value added products based on applications of sulfur dioxide as polar reaction medium and reagent. Latvian Council of Science (LCS) grant N# LZP-2018/1-0315, 2018-2021, 300'000 EUR, Head of the project.
- From the theory of azidopurine-tetrazolopurine tautomerism to its applications in medicinal and materials chemistry. SEDA Latvia-Ukraine joint project N# W3956, 2019-2020, 40'000 EUR, Head of the project.
- Design and study of light-emitting and solution-processed organic glasses. (PI: Prof. Valdis Kokars) ERDF project # 1.1.1.1/16/A/131, 2017-2019, 648'000 EUR, M. Turks: Coordinator of the Subproject on fused pyrimidine chemistry.
- Development of novel anticancer agents in the series of lupane triterpenoids for rare cancer therapy. Riga Technical University - Riga Stradins University joint project N# RTU/RSU-15, 2016-2018, 75'000 EUR, Head of the Project.
- Head of industrial projects 2018-2024 with pharmaceutical companies JSC Grindeks (<https://grindeks.eu/company/>) and JSC Olainfarm (<https://lv.olainfarm.com/en/>) on chemical synthesis R&D for generic drugs and with Tenachem Ltd (<https://tenachem.com/>), Tenax Panel Ltd (<https://tenaxpanel.lv/en/>) on polymer technologies, it total ~750'000 EUR

## PUBLICATIONS

	SCOPUS	Web of Science	Google Scholar
Hirsh index	23	22	25
Total number of publications / entries	152	266	221
Total number of citations	1790	1784	2126

### Recent selected papers on medicinal chemistry, drug conjugates and biomaterials:

- Indurkar A., Kudale P., Rjabovs V., Heinmaa I., Demir Ö., Kirejevs M., Rubenis K., Chaturbhuj G., **Turks M.**, Locs J. Small organic molecules containing amorphous calcium phosphate: synthesis, characterization and transformation. *Front. Bioeng. Biotech.* **2023**, 11, art. no. 1329752. <https://doi.org/10.3389/fbioe.2023.1329752>
- Lombrea, A.; Watz, C.G.; Bora, L.; Dehelean, C.A.; Diaconeasa, Z.; Dinu, S.; **Turks, M.**; Lugiņina, J.; Peipiņš, U.; Danciu, C. Enhanced Cytotoxicity and Antimelanoma Activity of Novel Semisynthetic Derivatives of Betulinic Acid with Indole Conjugation. *Plants* **2024**, 13, 36. <https://doi.org/10.3390/plants13010036>
- Lombrea, A.; Semenescu, A.-D.; Magyari-Pavel, I.Z.; **Turks, M.**; Lugiņina, J.; Peipiņš, U.; Muntean, D.; Dehelean, C.A.; Dinu, S.; Danciu, C. Comparison of *in vitro* Antimelanoma and Antimicrobial Activity of 2,3-Indolo-betulinic Acid and Its Glycine Conjugates. *Plants* **2023**, 12, 1253. <https://doi.org/10.3390/plants12061253>

- Lugiņina, J., Linden, M., Bazulis, M., Kumpiņš, V., Mishnev, A., Popov, S.A., Golubeva, T.S., Waldvogel, S.R., Shults, E.E., **Turks, M.** Electrosynthesis of Stable Betulin-Derived Nitrile Oxides and their Application in Synthesis of Cytostatic Lupane-Type Triterpenoid-Isoxazole Conjugates. *Eur. J. Org. Chem.* **2021**, 17, 2557-2577. <https://doi.org/10.1002/ejoc.202100293>
- Mierina, I., Vilskersts, R., **Turks, M.** Delivery systems for birch-bark triterpenoids and their derivatives in anticancer research. *Curr. Med. Chem.* **2020**, 27, 1308-1336. <https://doi.org/10.2174/0929867325666180530095657>
- Zeltins, A., **Turks, M.**, Skrastina, D., Lugiņina, J., Kalnciema, I., Balke, I., Bizdēna, Ē., Skrivelis, V. Synthesis and immunological evaluation of virus-like particle-milbemycin A<sub>3</sub>/A<sub>4</sub> conjugates. *Antibiotics*, **2017**, 6, art. no. 18. <https://doi.org/10.3390/antibiotics6030018>
- Stipniece, L., Salma-Ancane, K., Rjabovs, V., Juhnevica, I., **Turks, M.**, Narkevica, I., Berzina-Cimdina, L. Development of functionalized hydroxyapatite/poly(vinyl alcohol) composites. *J. Cryst. Growth*, **2016**, 444, 14-20. <https://doi.org/10.1016/j.jcrysgro.2016.03.029>
- Stepanovs, D., Tetere, Z., Raviņa, I., Kumpiņš, V., Zicane, D., Bizdēna, E., Bogans, J., Novosjolova, I., Grigaloviča, A., Meri, R.M., Fotins, J., Čerkasovs, M., Mishnev, A., **Turks, M.** Structural characterization of cevimeline and its trans-impurity by single crystal XRD. *J. Pharm. Biomed. Anal.* **2016**, 118, 404-409. <https://doi.org/10.1016/j.jpba.2015.11.006>

### **Recent selected papers on organic synthesis methodology:**

- Kronkalne R., Beļauņieks R., Ubaidullajevs A., Mishnev A., **Turks M.** 1,2-Silyl Shift-Induced Heterocyclization of Propargyl Silanes: Synthesis of Five-Membered Heterocycles Containing a Functionalized Olefin Side Chain. *J. Org. Chem.* **2023**, 88, 13857 – 13870. <https://doi.org/10.1021/acs.joc.3c01481>
- Jeminejs, A., Novosjolova, I., Bizdēna, Ē., **Turks, M.** Nucleophile–nucleofuge duality of azide and arylthiolate groups in the synthesis of quinazoline and tetrazoloquinazoline derivatives. *Org. Biomol. Chem.* **2021**, 19, 7706-7723. <https://doi.org/10.1039/D1OB01315G>
- Jeminejs, A., Goliškina, S.M., Novosjolova, I., Stepanovs, D., Bizdēna, Ē., **Turks, M.** Application of Azide-Tetrazole Tautomerism and Arylsulfanyl Group Dance in the Synthesis of Thiosubstituted Tetrazoloquinazolines. *Synthesis*, **2021**, 53, 1543-1556 [Featured as the journal cover page] <https://doi.org/10.1055/s-0040-1706568>
- Blum, S.P., Schollmeyer, D., **Turks, M.**, Waldvogel, S.R. Metal- and Reagent-Free Electrochemical Synthesis of Alkyl Arylsulfonates in a Multi-Component Reaction. *Chem. Eur. J.* **2020**, 26, 8358-8362. [Selected as a cover feature] <https://doi.org/10.1002/chem.202001180>
- Gulbe, K., **Turks, M.** Synthesis of Sulfones via Ru(II)-Catalyzed Sulfination of Boronic Acids. *J. Org. Chem.* **2020**, 85, 5660-5669. <https://doi.org/10.1021/acs.joc.9b03403>
- Zaķis, J.M., Ozols, K., Novosjolova, I., Vilškersts, R., Mishnev, A., **Turks, M.** Sulfonyl Group Dance: A Tool for the Synthesis of 6-Azido-2-sulfonylpyrimidine Derivatives. *J. Org. Chem.* **2020**, 85, 4753-4771. <https://doi.org/10.1021/acs.joc.9b03518>

## **OTHER INFORMATION**

### **Teaching and scientific supervision**

Responsible professor for 7 courses on organic, medicinal and pharmaceutical chemistry.

Supervised Doctoral thesis: 7 finished, 4 ongoing

Supervised Master thesis: 29 graduates; Supervised Bachelor thesis: 45 graduates

External reviewer for >30 PhD thesis (Latvia, Spain, Lithuania, Estonia, Belarus)

### **Representative patents/patent applications (in total: 37)**

- Bizdēna, E.; Kumpiņš, V.; Turks, M. Process for isolation of milbemycins A<sub>3</sub> and A<sub>4</sub>. Eur. Pat. Appl. EP2886640 (A1), 2015-06-24.
- Zhulenkovs, D.; Rudevica, Z.; Leoncijs, A.; Jaudzems, K.; Zicāne, D.; Turks, M. N-(3-hydroxy-5,7-dimethyladamantan-1-yl)-2-(3-oxobenzod[*d*]isothiazol-2(3H)-yl)acetamide as a novel inhibitor for *Staphylococcus aureus* sortase A. Eur. Pat. Appl. EP2875816 (A1), 2015-05-27.
- Zhulenkovs, D.; Rudevica, Z.; Leoncijs, A.; Jaudzems, K.; Zicāne, D.; Turks, M. N'-(2-(3-oxobenzod[*d*]isothiazol-2(3H)-yl)acetyl)adamantane-1-carbohydrazide as a novel inhibitor for *Staphylococcus aureus* sortase A. Eur. Pat. Appl. EP2875815 (A1), 2015-05-27.

### **Other activities**

2023	Acting Dean of the RTU Faculty of Materials Science and Applied Chemistry, Dean 07.2018-05.2023.
Since 2020	Member of the Senate of the Latvian Academy of Science
Since 2019	Management Committee member: COST Action CA18132. Functional Glyconanomaterials for the Development of Diagnostics and Targeted Therapeutic Probes
Since 2018	Director of the study field “Chemistry, Chemical Technology and Biotechnology” and the corresponding study programs at Bachelor, Master, PhD levels, Faculty of Materials Science and Applied Chemistry, RTU
Since 2018	Member of the Professor Council for Chemistry at University of Latvia
Since 2018	Member of the RTU Senate
Since 2015	Associated Editor of <i>Chemistry of Heterocyclic Compounds</i>
Since 2014	Member of the RTU Scientific Council and the RTU Professor Council for Chemistry and Chemical Engineering, Chair of the Professor Council since October 2018
Since 2010	Member of the RTU PhD awarding Promotion Council P-01, Chair of the Council since April 2020.

### **Awards**

Riga Technical University Award of Academic Excellence 2022

Riga Technical University Scientist of the Year 2020

Riga Technical University Valorization (industrial collaboration) Award 2017

The Latvian Academy of Sciences Gustavs Vanags Prize (in Chemistry) 2016

The Latvian Academy of Science President's Award for achievements in science, 2016, 2020

Full Member of the Latvian Academy of Sciences, 2014

/ M.Turks, October 11, 2024 /