



MACAEV Fliur Zainutdin, born in 1959, doctor habilitate in organic chemistry from 2002, studied chemistry and biology at the Bashkirian State Pedagogical University, gaining a PhD from the Institute of Organic chemistry (Ufa, Bashkortostan, Russia) at the Ural Polytechnic Institute (Sverdlovsk, Russia) under supervision of Academician, Professor Ghenrikh Tolstikov in 1990. After postdoctoral trainings in vitamin D₃ analogues synthesis at the Institute of Organic Chemistry of the Polish Academy of Sciences (1995-1996) with Professor Jersy Wicha and in insect-antifeedant synthesis at Wageningen Agricultural University (1998-1999) with Professor Aede de Groot, he joined the staff of the Institute of Chemistry of the Academy of Sciences of Moldova as the head of the Laboratory of Organic Synthesis since 1999.

Education/Career

Corresponding Member of the Academy of Sciences of Moldova, 2023, Chisinau, Moldova

Professor in Bioorganic Chemistry, 2014, Institute of chemistry, Chisinau, Moldova

Professor in Organic Chemistry, 2012, Institute of chemistry, Chisinau, Moldova

Dr. habilitat in Organic Chemistry, 2002, Institute of chemistry, Chisinau, Moldova

Associated Professor in Organic Chemistry, 1993, Institute of chemistry, Chisinau, Moldova

Membership of Professional Societies

Moldovan Chemical Society

Royal Society of Chemistry

Employment (employers, positions and dates)

Moldova State University, Institute of Chemistry, head of laboratory, 2024-present.

Institute of Chemistry, head of laboratory, 2020-2023.

Institute of Chemistry of the Academy of Sciences of Moldova, head of laboratory, 1999-2019.

Institute of Chemistry, Academy of Sciences of Moldova, leading scientific researcher, 1995.

Institute of Chemistry, Academy of Sciences of Moldova, Senior Scientific Researcher, 1993.

Institute of Chemistry, Academy of Sciences of Moldova, Scientific Researcher, 1992.

Institute of Chemistry, Academy of Sciences of Moldova, Junior Researcher, Chisinau, 1991.

Institute of Chemistry, Academy of Sciences of USSR, Junior Researcher, Ufa, 1986.

Specialization (specify)

(a) main field

organic and medicinal chemistry, environmental sciences, nano-chemistry, new catalysts (metal-mediated and metal-free), asymmetric synthesis, ionic liquids (including magnetic ones), computer-aided molecular design, raw and waste materials chemistry, recycling materials, nano-materials and bio-films

(b) current research interest

Specializing in various aspects of organic and medicinal chemistry, he is currently engaged in the projects directed towards discovery of new catalytic systems (metal-based and metal-free) for asymmetric formation of the C-C, C-N and C-P bonds; mechanistic investigation of the reactions which proceed with high level of regio- and stereoselectivity; ionic liquids as green alternatives for conventional solvents; total synthesis of biologically active compounds and analogues, employing computer-aided molecular design and structure-activity analysis.

(c) experience

Prof. Macaev has successfully participated in 18 international projects (INTAS projects Ref. № 2000-0711 and Ref. № 2006-8064, MD-US projects CRDF/MC2-3007 and CRDF/MERL-7031, MD-Russia project - Ref. № 06.21CRF, MD-Belarus project Ref. № 05.15BF, MD-Ukraine project Ref. № 10.820.09.01/UA, MD-Germany project Ref. № 09.820.05.08 GF, The Royal Society International Joint Project Ref. № JP090309), STCU Ref. № 5800 as well as member of a group (SCOPE5, Ref. Nr.110823), and 8 national projects as coordinator (2000-2005. Ref. № 0101 MD 01915; 2006-2010. Ref. № 06.408.030F.; 2011-2012. Ref. № 11.824.08.136T; 2014-2015. Ref. № 14.518.04.08A.; 2011-2014. Ref. № 11.817.08.20F.; 2011-2014. Ref. № 11.817.08.20F.; 2015-2018. Ref. № 15.817.02.17A.; 2015-2018. Ref. № 15.817.02.17A.; 2020-2023. Ref. №20.80009.5007.17).

Awards

Prof. Macaev was awarded as author as well as co-author: 1990 - Winner of the prize for young scientific in science and engineering of USSR (Kiev, Ukraine, USSR). Diploma of the Government of the Republic of Moldova for outstanding results in the field of research activity (2014). Award of the Academy of Sciences of Moldova for scientific achievements (2019, 2014, 2011, 2003), Diploma of the Academy of Sciences of Moldova for high-performance results, as well as on the occasion of the 70th anniversary of the creation of the first research institutes and the 55th anniversary of the founding of AȘM (2016), Diploma "Academic Merit" of AȘM (2014), Diploma of Merit of AȘM (2010). Gold Medal at the International Exhibition of Scientific Research, Innovation and Invention Pro invent 2022 (Cluj-Napoca, Romania), Gold Medal at the Inventica International Exhibition 2022, Gold Medal at the Traian Vuia International Exhibition 2022 (Timisoara, Romania), Gold and Silver Medal at the International Exhibition "Expo-EUROINVENT 2022" (Iasi, Romania), Gold and Silver Medal at the "Expo-EUROINVENT 2021" International Exhibition (Iasi, Romania), Silver and Bronze Medal at the "Expo-EUROINVENT 2020" International Exhibition (Iasi, Romania), Gold Medal at the "INFOINVENT-2019" International Exhibition (Chisinau, Moldova), Gold and Silver Medal at the International Exhibition "Expo-EUROINVENT 2019" (Iasi, Romania), Gold Medal at the "INVENT-INVEST 2018" International Exhibition (Chisinau, Moldova), Gold Medal at the International Exhibition "Expo-EUROINVENT 2018" (Iasi, Romania), Gold Medal at the International Exhibition "Expo-EUROINVENT 2017" (Iasi, Romania), Gold Medal at the International Exhibition "INFOINVENT-2017" (Chisinau, Moldova), Gold Medal at the International Exhibition "TESLA FEST 2017" (Нови Сад, Србија), Gold Medal at the International Exhibition "Expo-EUROINVENT 2016" (Iasi, Romania), Gold Medal, Gold Medal at the International Exhibition "INFOINVENT-2013" (Chisinau, Moldova), Gold Medal at the International Expo-EUROINVENT 2012 (Iasi, Romania), Gold Medal at the 39th Salon International des Inventions de Genève 2011 (Geneva, Switzerland), Gold Medal at the International Expo-EUROINVENT 2011 (Iasi, Romania), Gold Medal at the International Expo - Brussels EUREKA INNOVA 2010 (Brussels, Belgium), Bronze Medals at the International Exposition INFOINVENT-2007 and International Exposition INFOINVENT-2004 (Chisinau, Moldova)

SELECTED PUBLICATIONS

Book/Book chapter

1. ЕРЕМИЯ, Н., МАКАЕВ, F., ZNAGOVAN, A., COȘELEVA, O. The technology of maintenance and exploitation of bee colonies. Recommendations. Chișinău. „Print-Caro”, 2023. 104 p. ISBN 978-9975-175-14-2.
2. SUCMAN, N., МАКАЕВ, F. Photosensitive Nanopesticides for Environmentally Friendly and Sustainable Agriculture. In: Environmental and Technological Aspects of Redox Processes. (Eds) Gh. Duca, A. Vaseashta. IGI Global, May, 2023, p.410. DOI:10.4018/979-8-3693-0512-6. ISBN: 9798369305126. EISBN: 9798369305140

3. Duca Gh.G., **Macaev F.** Compounds and Materials for Drug Development and Biomedical Applications. Editura Academiei Române-Editura Istros, București-Brăvila. 2018, 307 p. ISBN 978-973-27-2944-1, ISBN 978-606-654-297-5.

Articles

1. POGREBNOI, S., RADUL, O., STINGACI, E., LUPASCU, L., VALICA, V., UNCU, L., SMETANSCAIA, A., PETROU, A., CIRIC, A., GLAMOCLIIA, J., SOKOVIC, M., GERONIKAKI, A. **MACAEV, F.** Z.Triazolium salts as antifungal agents. Synthesis, biological and in *silico* evaluation. *Antibiotics* 2022, 11(5), 588. ISSN 2079-6382. <https://doi.org/10.3390/antibiotics11050588>
2. ZVEAGHINTSEVA, M., STINGACI, E., POGREBNOI, S., SMETANSCAIA, A., VALICA, V., UNCU, L., KRAVTSOV, V., MELNIC, E., PETROU, A., GLAMOCLIIA, J., SOKOVIĆ, M., CARAZO, A., MLADĚNKA, P., POROIKOV, V., GERONIKAKI, A., **MACAEV, F.** Z. Chromenols derivatives as novel antifungal agents. Synthesis, In Silico and In Vitro Evaluation biological evaluation and molecular docking. În: *Molecules*, 2021, 26(14), 4304. (IF: 4.411). ISSN 1420-3049 (Online) DOI: [10.3390/molecules26144304](https://doi.org/10.3390/molecules26144304)
3. BILAN, D.Y., SUCMAN, N.S., RADUL, O.M., DRAGALIN, I.P., BARBA, A.N., **MACAEV, F.** Synthesis of (-)-convolutamydine a derivatives and analogs, *Chem. Natur. Comps.* 2021, vol. 57, pp. 516-520. DOI: <https://doi.org/10.1007/s10600-021-03400-3>
4. CURLAT, S.N., **MACAEV, F.** Synthesis of 1,2,3-Triazole-Substituted 3,7,7-Trimethylbicyclo[4.1.0]Heptanols Based on (+)-3-Carene. *Chem. Natur. Comps.* 2021, vol. 57, pp. 733-740. <https://doi.org/10.1007/s10600-021-03461-4>
5. STINGACI, E.; ZVEAGHINTEVA, M.; POGREBNOI, S.; LUPASCU, L.; VALICA, V.; UNCU, L.; SMETANSCAIA, A.; DRUMEA, M.; PETROU, A.; CIRIC, A.; GLAMOCLIIA, J.; SOKOVIC, M.; KRAVTSOV, V.; GERONIKAKI, A.; **MACAEV, F.** New vinyl-1,2,4-triazole derivatives as antimicrobial agents: Synthesis, biological evaluation and molecular docking studies. *Bioorganic & Medicinal Chemistry Letters*. 2020, 30 (17), 127368. <https://doi.org/10.1016/j.bmcl.2020.127368>

Patents/Brevets

1. Eremia, N., **Macaev, F.**, Krasociko, P., Pogrebnoi, S., Znagovan, A., Neicovcena, I., Coșeleva, O., Eremia, I., Sarî, A. Procedeu de hrănire a albinelor. Brevet de invenție de scurtă durată. Chișinău, MD 1611 Y 2022.04.30. BIOPI nr. 4/2022.
2. Eremia N., **Macaev, F.**, Pogrebnoi, S., Znagovan, A., Modvala, S., Mardari T., Eremia, I., Sarî, A. Procedeu de hrănire a albinelor. Brevet de invenție de scurtă durată. Chișinău, MD 1598 Z 2022.09.30. BIOPI nr. 4/2022.
3. Eremia, N., **Macaev, F.**, Krasociko, P., Pogrebnoi, S., Znagovan, A., Neicovcena, I., Coșeleva, O., Eremia, I., Sarî, A. Procedeu de hrănire a albinelor. Brevet de invenție de scurtă durată. Chișinău, MD 1611 Y 2022.04.30. BIOPI nr. 4/2022.
4. Lupașcu, G., **Macaev, F.**, Gavzer, S., Cristea, N., Lupașcu, L., Stângaci, E., Pogrebnoi, V., Pogrebnoi, S. Procedeu de tratare a boabelor de grâu comun de toamnă. Brevet de invenție de scurtă durată MD №1604 B1 acordat din 2022.03.31. BOPI nr.3/2022
5. Lupașcu, G., **Macaev, F.**, Gavzer, S., Cristea, N., Lupașcu, L., Stângaci, E., Zveaghințeva M., Pogrebnoi S. Procedeu de tratare a boabelor de grâu comun de toamnă. Brevet de invenție de scurtă durată MD № 1603 B1 acordat din 2022.03.31. BOPI nr. 3/2022
6. Lupașcu, G., **Macaev, F.**, Gavzer, S., Cristea, N., Lupașcu, L., Stângaci, E., Zveaghințeva, M., Pogrebnoi, S. Procedeu de tratare a boabelor de grâu comun de toamnă. Brevet de invenție de scurtă durată MD №1591 B1 acordat din 2022.01.31. BOPI nr. 1/2022
7. **Macaev, F.**; Stângaci, E.; Pogrebnoi, S.; Boldescu, V. Metodă pentru sinteza 3,3-dialilindolin-2-unei. Institutul de Chimie. Brevet de invenție MD №4739B1, acordat din 2021.01.31.
8. **Macaev, F.**; Stângaci, E.; Pogrebnoi, S.; Boldescu V. (Z) -5-metil-1- (4-nitrofenil) -2- (1H-1,2,4-triazol-1-il) hex-1-en-3-onă, procedeuși sinteză ei în calitate de remediu antifungic . Institutul de Chimie. Brevet de invenție MD № 4703C1., eliberat din 2020.07.31.
9. **Macaev, F.**; Bilan, D.; Radul, O.; Boldescu, V. Procedeu de sinteza diastereo- și enantioselectivă a (S)-3-hidroxi-3-((R)-2-oxociclohexil) indolin-2-unei. Institutul de Chimie. Brevet de invenție MD № 4689C1., acordat din 2021.02.28. BOPI nr.2/2021
10. **Macaev, F.**; Zveaghințeva, M.; Stângaci, E.; Pogrebnoi, S.; Lupașcu, L. Utilizare a (Z)-4,4-dimetil-1-(4-nitrofenil)-2-(1H-1,2,4-triazol-1-il)pent-1-en-3-unei în calitate de ingredient activ contra bacteriilor fitopatogene. Institutul de Chimie. Brevet de invenție MD № 4740B1 acordat din 2021.02.28. BOPI nr.2/2021