

Laboratory of Synthesis and Structural Investigation of OrganoBoron Compounds (OBC)



Head

Andrzej Sporzyński

Current research

- Boronic acids and benzoxaboroles as molecular receptors for saccharides, amino acids and inorganic anions. Biological activity of selected compounds
- Synthesis and characterization of novel boronic acids and their derivatives. Multinuclear NMR characterization, calculation of chemical shifts
- Molecular and crystal structure of organoboron compounds. Influence of hydrogen bonds and weak interactions on the supramolecular structures
- Determination of acidity of organoboron compounds by experimental methods and calculations
- Equilibria in solutions of organoboron compounds

Selected publications

Adamczyk-Woźniak A., Cyrański M. K., Żubrowska A., Sporzyński A., *Benzoxaboroles – Old Compounds with New Applications*, Journal of Organometallic Chemistry, 694, 3533, 2009

Cyrański M. K., Jezierska A., Klimentowska P., Panek J. J., Sporzyński A., *Impact of Intermolecular Hydrogen Bond on Structural Properties of Phenylboronic Acid: Quantum Chemical and X-ray study*, Journal of Physical Organic Chemistry, 21, 472, 2008

Cyrański M. K., Klimentowska P., Rydzewska A., Serwatowski J., Sporzyński A., Stępień D. K., *Towards a Monomeric Structure of Phenylboronic Acid: the Influence of Ortho-Alkoxy Substituents on the Crystal Structure*, CrystEngComm 14, 6282, 2012

Adamczyk-Woźniak A., Borys K. M., Madura I. D., Pawełko A., Tomecka E., Żukowski K., *Lewis Acidity and Sugar Receptor Activity of 3-Amino-Substituted Benzoxaboroles and Their Ortho-Aminomethylphenylboronic Acid Analogues*, New Journal of Chemistry, 37, 188, 2013

Madura I. D., Czerwińska K., Jakubczyk M., Pawełko A., Adamczyk-Woźniak A., Sporzyński A., *Weak C-H...O and Dipole-Dipole Interactions as Driving Forces in Crystals of Fluorosubstituted Phenylboronic Catechol Esters*, Crystal Growth & Design, 13, 5344, 2013

Gierczyk B., Kaźmierczak M., Schroeder G., Sporzyński A., *¹⁷O NMR Studies of Boronic Acids and Their Derivatives*, New Journal of Chemistry, 37, 1056, 2013

Staff

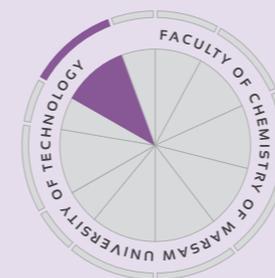
Agnieszka Adamczyk-Woźniak
Ewa Kaczorowska

Current PhD students

Krzysztof Borys
Alicja Matuszewska

Former PhD students

Michał Jakubczyk
Agnieszka Lewandowska
Michał Lewandowski
Anna Żubrowska



Research profile

Boronic acids
Benzoxaboroles
Molecular and crystal structure
Multinuclear NMR
Acidity
Synthesis

Collaboration

Faculty of Chemistry, Adam Mickiewicz University, Poznań (Poland)
Faculty of Chemistry, University of Opole (Poland)
Faculty of Chemistry, University of Gdansk (Poland)
Vanderbilt University, Nashville, Tennessee (USA)
Charles University, Prague (Czech Republic)

Scientific Awards

- Fellowship of the Minister of Science and Higher Education for Young Outstanding Scientists – Agnieszka Adamczyk-Woźniak, 2013
- Diamond Grant from the Minister of Science and Higher Education for the project *Synthesis and investigation of properties and applications of novel benzoxaboroles* – Krzysztof M. Borys, 2013
- Silver Medal in Chemistry (the 2nd prize) in the Gold Medal in Chemistry 2012 contest for the best bachelor thesis in Poland in the field of chemistry, organized by the Institute of Physical Chemistry, Polish Academy of Sciences – Krzysztof M. Borys
- Team Scientific Awards of HM Rector of the Warsaw University of Technology (3 times)

Research equipment

- Argon and vacuum lines
- Laboratory equipment for organic and organometallic synthesis
- Cryostat

Additional activity

- The OBC group organized EuroBoron 6 – 6th Triennial European Conference on Boron Chemistry, held from the 8th to 13th September 2013 in Radziejowice, Poland

