



Piotr Bałczewski

PROFESSOR – CMMS PAS · PROFESSOR – JAN DŁUGOSZ UNIVERSITY

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Scopus bibliometric data: citations **1485** · documents **126** · h-index **21**

Currently held positions

Centre of Molecular and Macromolecular Studies of the Polish Academy of Sciences

PROFESSOR COORDINATOR OF ORGANIC CHEMISTRY DIVISION

Jan Długosz University

PROFESSOR

Centre of Molecular and Macromolecular Studies of the Polish Academy of Sciences

HEAD OF FUNCTIONAL MATERIALS SYNTHESIS GROUP OPTICAL RESEARCH LABORATORY

Jan Długosz University

HEAD OF STRUCTURAL & MATERIAL CHEMISTRY GROUP, ECOTOXICOLOGICAL RESEARCH LABORATORY & LABORATORY OF NEW DRUG FORMULATIONS

Łódź

Częstochowa

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Częstochowa

Scientific profile and collaborations

- Organic and heteroorganic synthesis (organic phosphorus, sulfur, nitrogen and silicon compounds),
- New techniques in organic synthesis (ultrasound, mechanochemistry),
- New synthetic methodologies and new reactions (discovery of the hetero-Friedel-Crafts-Bradsher reaction in oxo-, thio- and phospho- variants, and the intermolecular radical transfer of iodine atom from phosphonates to alkenes and alkynes, I-ATRA),
- Chemistry of reactive transition products (radicals, carbocations, carboanions),
- Total synthesis of biomolecules (cyclopentanoids, alkaloids, lignanoids, heteronic salts (P, S, N),
- Ecotoxicological and agricultural chemistry (new herbicides, use of Microtox® biotest),
- Reaction mechanisms,
- Synthesis of chiral and achiral ionic liquids and their biological, medical and eco(phyto)toxicological studies,
- Materials chemistry (organic materials for molecular optoelectronics and the study of their optical, thermal and photochemical properties),
- Pharmaceutical chemistry (multi-component, co-crystalline and co-amorphous pharmaceutical formulations with improved solubility and bioavailability against hypertension, COVID-19 and neurodegenerative diseases).

Selected publications

- 2025 **High-efficiency light emitters:10-(diphenylphosphoryl)-anthracenes from one-pot synthesis including C-O-P to C-P(=O) rearrangement** [\[link\]](#)
- 2024 **New perspectives for antihypertensive sartans as components of co-crystals and co-amorphous solids with improved properties and multipurpose activity** [\[link\]](#)
- 2022 **The need to change the approach to the safe use of herbicides by developing chiral and environmentally friendly formulations: a series of enantioselective (R)- and (S)-phenylethylammonium chloroacetates** [\[link\]](#)

Research grants

Principal Investigator: over 20 grants: KBN, MNiI, MEiN, MNiSzW, NCN

Project Manager: 6 domestic grants: RPWŁ, POIGx3, POiR, AppToYou Sp. z o.o. Łódź, Beta-Bio Technology, Sp. z o.o., Częstochowa

Project Manager: 2 international grants with PPG Industries, USA

Obtained patents

30 patents: UPRP, EPO, WO

International research stays

Zentral Institut fur Organische Chemie, Berlin, Germany (2x), prof. Hans Gross

National Research Centre, Cairo, Egypt, prof. Raafat Mahran, prof. Waffa Abdou

The Hebrew University of Jerusalem, prof. Eli Breuer

Ben Gurion University of the Negev, Beer Sheva, Israel, prof. Shmuel Bittner

University of Rome (La Sapienza), Italy, prof. Sandro Cacchi

University of Milano, Italy, prof. Carlo Scolastico

University of Barcelona, Spain, prof. Mercedes Alvarez Domingo

University of Manchester, England, prof. John A. Joule (2 years)

CNRS - LCC, Laboratoire de Chimie de Coordination, Toulouse, France, prof. Jean-Pierre Majoral