

Sławomir Wybraniec



Academic degrees: dr. hab. eng.

Position: associate professor CUT

Scientific field: engineering-technical

Discipline: chemical engineering

Academic qualifications:

till 28-02-2021 - Head of the Department of Analytical Chemistry at Faculty of Chemical Engineering and Technology

Membership in professional and academic boards:

American Chemical Society

Academic merits:

87 publications in the database Web of Science, Hirsh Index – 26, Number of citations – 2098

Scientific projects:

1. „Structural research on new betalain pigments”, over the period 2003-2005, financed by POLPHARMA Scientific Foundation; Project No.: 015/2002 – as Principal Investigator;
2. „Influence of physicochemical conditions on chemical changes of betalain colorants and their derivatives”, over the period 2007-2010, financed by MNiSW. Project No.: N205 2991 33 – as Principal Investigator;
3. „Effect of decarboxylation and dehydrogenation of betalain pigments on their antioxidant properties”, over the period 2007-2010, financed by MNiSW. Project No.: N312 3268 33 – As Investigator;
4. „First studies of photoinduced processes in betalains by femtosecond UV-vis transient absorption spectroscopy.” OPUS, over the period 2014-2017, financed by NCN. Project No.: 2013/09/B/ST4/00273 – As Investigator;
5. „Studies on mechanism of betacyanin pigments oxidation” OPUS, over the period 2015-2017, financed by NCN. Project No.: 2014/13/B/ST4/04854 – as Principal Investigator;
6. „Studies on activity and stability of gomphrenin-based pigments from extracts of *Basella alba* L.” OPUS, over the period 2018-2021, financed by NCN. Project No.: 2017/27/B/NZ9/02831– as Principal Investigator;
7. „ Biological activity of betalains from *Atriplex hortensis* var. *rubra* - dietary significance of the alternative, edible source of dyes for designing new functional food.” over the period 2020-2023, PRELUDIUM - financed by NCN. Project No.: 2019/33/N/NZ9/01590 – as Supervisor
8. „ Fruits of *Hylocereus polyrhizus* clones as an alternative source of acylated betacyanin pigments in preparation of microsystems and modulation of hepatocellular carcinoma cell metabolism - in vitro studies.” over the period 2022-2025, PRELUDIUM - financed by NCN. Project No.: 2021/41/N/NZ9/03046 – as Supervisor
9. „Sulfhydryl conjugates of betacyanins as emerging pigments based on plant origin with potential preventive activity in oxidative stress disorders: anti-inflammatory and stability studies.” over the period 2023-2027, PRELUDIUM - financed by NCN. Project No.: 2023/49/N/NZ9/02658 – as Supervisor

Professional qualifications/language skills

English

Research field:

Analytical chemistry of natural compounds, Food chemistry, Organic compound bioactivity studies, Liquid chromatography, Countercurrent chromatography, Extraction, Mass spectrometry

Scientific activity:

1. Analytics of betalain pigments in plant samples: Betalain chromatographic separation methods, Betalain extraction methods, Application of mas spectrometry in betalain analytics, Determination of betalain structures by NMR method.
2. Analytics of natural compounds.
3. Studies on antioxidant and chemopreventive properties of betalains.
4. Fluorescence in betalain pigments.
5. Application of betalain pigments as food colorants (stability of betalains and their decomposition products).
6. Chromatographic separation and identification studies of natural secondary plant metabolites - carotenoids, anthocyanins and quinones.

Address

Department of Chemical Technology and Environmental Analytics (C-1),
Faculty of Chemical Engineering and Technology,
Cracow University of Technology,
ul. Warszawska 24
31-155 Cracow, Poland
tel.: 606-601-342
e-mail: slawomir.wybraniec@pk.edu.pl

Useful links:

<https://www.chemia.pk.edu.pl/pracownicy/strony-osobiste-pracownikow/pracownik/?id=11>
<https://www.facebook.com/k.tech.chem.anal.srod.C1/>
<http://suw.biblos.pk.edu.pl/userHomepage&uld=78&rel=BPP-author>