

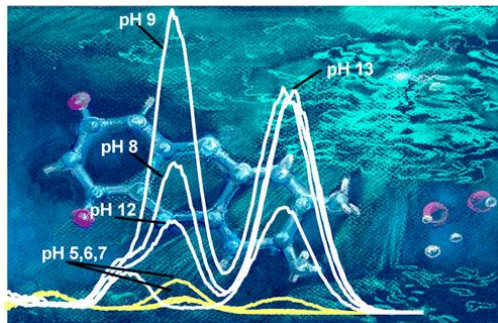
As Light Meets Flavins: From Principles to Applications

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Abstract

The main aim of the talk is to present general design principles and guidelines to build sustainable high-performance flavin derivatives suitable for future use, in pure science, food product quality assessment, biology, medicine, and photocatalysis. The results presented combine multidisciplinary research from chemistry, physics, biology, pharmacy, food and nutrition technology, mathematics, chemical engineering, and social sciences. Fundamental properties of flavins will be presented from the standpoint of their practical use, including appropriate molecular structure and photophysical properties, redox properties, solubility and photo- and chemical stability. Recent results from two ongoing financed projects, *Flavin-based tools for monitoring and controlling redox environment in cells* and *Tailoring flavins for organic photocatalysis* will be presented.



Biography

Prof. Marek Sikorski received his M.Sc. in physics, and Ph.D. in chemistry from the Adam Mickiewicz University, Poland. After postdocs in Loughborough UK (Royal Society of London and the Foreign & Commonwealth Fellowship), in Saskatoon Canada, and in Notre Dame, US (Fulbright Fellowship), he completed his habilitation in chemistry at AMU. Now he is full Professor and Head of Department of Spectroscopy and Magnetism at AMU. He is the author of more than 200 research papers, book author, book editor, and author of several book chapters. He has been awarded, among others, Journal Grant for International Authors, by The RSC, twice, for a series of articles published in RSC journals. Nowadays, his research interests focus on both molecular spectroscopy and its applications. He gives a special commitment to the ongoing study of interaction of light with biologically important flavins, other groups of photoactive compounds include stilbazoles, thioketones, porphyrazines, and dihydropyridines, food products, as beers, edible oils in general and olive oils in particular, and also systems of practical importance, including paper, kraft pulps and dental materials.



Selected contributions

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- K. Wojcicki, I. Khmelinskii, M. Sikorski, E. Sikorska, *Near and mid infrared spectroscopy and multivariate data analysis in studies of oxidation of edible oils*, *Food Chem.*, 187 (2015) 416-423.
- M. Insinska-Rak, M. Sikorski, *Riboflavin interactions with oxygen-A survey from the photochemical perspective*, *Chem. Eur. J* 20 (2014) 15280-15291.