

Special Issue on
New Trends in the Analysis of Organic Pigments

CALL FOR PAPERS

Organic, plant-derived pigments are of particular significance in the biosphere: chlorophylls are Earth's most important organic molecules necessary for photosynthesis and carotenoids are essential for plant and mammal survival through their photosynthetic and nutritional functions, while other pigment groups are key to the physiology of plants and the organisms with which they interact. The use of isolated pigments in various fields of food and cosmetic industries is well known. Besides their use as natural dyes, a wide range of medical attributes such as antioxidant, antiviral, anticancerogenic, antithrombotic, anti-ischemic, antiallergic, and anti-inflammatory action propose a role for organic pigments in the development of new pharmaceuticals. Most of the actions listed actually rely on the pigment's ability to efficiently scavenge Reactive Oxygen Species (ROS), such as superoxide anion radicals, singlet oxygen and hydroxyl radicals, cyclooxygenase and lipoxygenase inhibitors, and chelating agents of transient metal ions.

The main challenge in the production of pharmaceutical compounds is pigment degradation, which may affect both color and appearance of the final product, altering its quality as well. Many factors, such as temperature, humidity, oxygen, carbon dioxide, sulfur dioxide, and ultraviolet light contribute to the degradation process. A better understanding of the chemical processes involved in the degradation of frequently used pigments is an important step in the development of effective measures that inhibit or stop these processes. Therefore, new techniques in the analysis of pigment degradation during processing and storage of products are needed.

The aim of this special issue is to give a deeper insight into current analytic methods used in the study of organic pigments and their derivatives in the pharmaceutical products, as well in medicine or bioengineering, using powerful separation methods such as small particle column chromatography coupled with a wide range of detectors (DAD, ESI MS, NMR, etc.). We encourage comprehensive articles related to the development of new analytical methods, although traditional instrumental approaches (FTIR, UV-VIS, TGA, DSC, TEM, etc.) are also welcome. This special issue focuses on contributions regarding original research studies and reviews articles on the most innovative and advanced analytical methods for quality control of products based on organic pigments.

Potential topics include but are not limited to the following:

- ▶ Innovative coupled methods (multi-EPR/HPLC) in characterization of the pigment-based organic free radicals
- ▶ Testing of pigments by chromatographic techniques (HPLC, GC-MS, TLC, and GPC)
- ▶ Examination of pigments using X-ray fluorescence and X-ray diffraction techniques
- ▶ Structural analysis of pigments using spectroscopic techniques (FTIR, Raman, UV-VIS, NMR, MALDI-TOF, and SEM/TEM microscopy)
- ▶ Thermal methods of pigment analysis (TG, DTA, and DSC)
- ▶ Stability factors and degradation processes of organic pigments
- ▶ Analysis of pigments in food, pharmaceuticals, or cosmetics products
- ▶ Analysis of pigments in medicine or bioengineering processes

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jamc/ntaop/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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