

Special Issue on
Spectral Image Processing as a Tool for Analysis of Cultural Heritage

CALL FOR PAPERS

Spectral imaging has been no doubt one of the emerging fields in image capture in the last 20 years. Spectral image processing has proven to add value to the data analysis in a growing number of application fields (satellite image analysis, crops and meat health analysis, medical imaging, among others). However, its potential for the analysis and study of cultural heritage and artworks in general has been only recently brought forward, and thus it is not yet fully explored.

This special issue aims to cover some challenging applications in which the potential of spectral imaging for the analysis of cultural heritage is highlighted. In all the topics listed below and others which might be considered of interest, especial emphasis will be given to contributions that focus on the simplification of capture procedures or spectral image processing techniques (band selection or reduction, building of ad hoc multispectral capture devices for particular applications from off-the-shelf components, automatic detection of objects, or artifacts of interest). Also, contributions in which the capacity of spectral image-based data analysis for offering additional insight in comparison with the analysis of data acquired by area-based or conventional imaging devices will be considered with enhanced priority. Data gathering devices in spectral ranges outside of the visible (infrared or ultraviolet frequencies) will also be of interest, especially in relation to novel designs or application studies. Insightful reviews of selected topics of interest within the field are also encouraged.

Potential topics include but are not limited to the following:

- ▶ Spectroscopic mapping and identification of art materials (including paints, canvases, sculptures, and frescos) in the visible and nonvisible ranges
- ▶ Spectral unmixing techniques applied to identification of materials in art
- ▶ Spectroscopic image-based techniques for the detection of artifacts related to ageing (craquelure, yellowing, or darkening)
- ▶ The applications of spectral imaging in the characterization of the ageing process of pigments/dyes or varnishes
- ▶ Applications of spectral imaging techniques to detect pentimenti or underdrawings
- ▶ Development of new methods and instrumentation for spectral image documentation
- ▶ Image processing in spectral imaging of cultural heritage
- ▶ Cultural heritage visualization using spectral imaging

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

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

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