

Preface

The state of the art in optical characterization of materials is advancing rapidly. New insights into the theoretical foundations of this research field have been gained and exciting practical developments have taken place, both driven by novel applications and innovative sensor technologies that are constantly emerging. The big success of the international conferences on Optical Characterization of Materials in 2013, 2015 and 2017 proves the necessity of a platform to present, discuss and evaluate the latest research results in this interdisciplinary domain. Due to that fact, the international conference on Optical Characterization of Materials (OCM) took place the fourth time in March 2019.

The OCM 2019 was organized by the Karlsruhe Center for Spectral Signatures of Materials (KCM) in cooperation with the German Chapter of the Instrumentation & Measurement Society of IEEE. The Karlsruhe Center for Spectral Signatures of Materials is an association of institutes of Karlsruhe Institute of Technology (KIT) and the business unit Automated Visual Inspection of the Fraunhofer Institute of Optronics, System Technologies and Image Exploitation IOSB.

Despite the conference's young age, the organizing committee has had the pleasure to evaluate a large amount of abstracts. Based on the submissions, we selected 22 papers as talks, a keynote lecture and several practical demonstrations.

The present book is based on the conference held in Karlsruhe, Germany from March 13–14, 2019. The aim of this conference was to bring together leading researchers in the domain of Characterization of Materials by spectral characteristics from UV (240 nm) to IR (14 μm), multispectral image analysis, X-ray methods, polarimetry, and microscopy. Typical application areas for these techniques cover the fields of, e.g., food industry, recycling of waste materials, detection of contaminated materials, mining, process industry, and raw materials.

The editors would like to thank all of the authors that have contributed to these proceedings as well as the reviewers, who have invested a generous amount of their time to suggest possible improve-

ments of the papers. The help of Henning Schulte, Jürgen Hock and Anja Shevchyk in the preparation of this book is greatly appreciated. Last but not least, we thank the organizing committee of the conference, led by Britta Ost, for their effort in organizing this event. The excellent technical facilities and the friendly staff of the Fraunhofer IOSB greatly contributed to the success of the meeting.

March 2019

Jürgen Beyerer
Fernando Puente León
Thomas Längle