Table of contents

Foreword ix

Part I  In-situ Measurements

Chapter I-1  Characterization of Pigments Used in Ancient Egypt
M. Uda 3

Chapter I-2  Importance of in-situ EDXRF Measurements in the Preservation and Conservation of Material Culture

Chapter I-3  Scientific Field Research in Egypt - Results from research undertaken by the Institute of Egyptology, Waseda University-
Sakui Yoshimura 55

Part II  Use of Ion Beam

Chapter II-1  Ion Beam Techniques for the Non-destructive Analysis of Archaeological Materials
Guy Demortier 67

Chapter II-2  The Origin of Ancient Gemstones Unveiled by PIXE, PIGE and μ-Raman Spectrometry
T. Calligaro 101

Chapter II-3  Investigations of Medieval Glass by a Combined PIXE/PIGE Method
Glassmaking à façon de Venise
Z. Smit and M. Kos 113
Chapter II-4
PIXE Analysis of pre-Hispanic Items from Ancient America
J.L. Ruvalcada Sil

Chapter II-5
PIXE Study on Chinese Underglaze-Red Porcelain Made in Yuan Dynasty
H.S. Cheng, Z.Q. Zhang, E.K. Lin, Y.P. Huang

Chapter II-6
Glassmaking in the Venetian Manner
Mateja Kos and Žiga Šmit

Chapter II-7
Study on Pigments for Ceramics and Glass Using X-ray Methods
B. Constantinescu, Roxana Bugoi, GH. Niculescu, D. Popovici, GH. Manucu-Adamesteancu

Chapter II-8
Compositional Differences of Blue and White Porcelain Analyzed by External Beam PIXE

Part III Use of Synchrotron Radiation

Chapter III-1
Synchrotron radiation X-ray fluorescence analysis of archaeological ceramics and glass
Izumi Nakai

Chapter III-2
Synchrotron Radiation in Archaeological and Cultural Heritage Science
E. Pantos

Chapter III-3
Study of the Elemental Distribution in Ancient Chinese Porcelain
### Part III. Study on the Compositional Differences among Different Kilns’ Tang Sancai by SRXRF

**Chapter III-4**  
Study on the Compositional Differences among Different Kilns’ Tang Sancai by SRXRF  
Y. Lei, S. L. Feng, J. Jiang, Z. X. Zhuo, S. L Zhang, Y. M. Liao

**Chapter III-5**  
Study of Chemical Composition in Ancient Celadon of Yue Kiln  
Dongyu Fan, Songlin Feng, Qing Xu

### Part IV. Radiography

**Chapter IV-1**  
The Use of Medical Computed Tomography (CT) Imaging in the Study of Ceramic and Clay Archaeological Artifacts from the Ancient Near East  
N. Applbaum and Y.H. Applbaum

**Chapter IV-2**  
The Radiographic Examinations of the “Guardian Statues” from the Tomb of Tutankhamen  
Jiro Kondo

**Chapter IV-3**  
Analytical Study of Paintings by X-ray Radiography and Spectoroscopy  
Kamba Nobuyuki

**Chapter IV-4**  
Radiographic Findings in Ancient Egyptian Mummies  
Kazuaki Hirata

### Part V. Interdisciplinary Field between Art and Science

**Chapter V-1**  
X-ray Application on Post-Amarna Objects from Dahshur  
S.Hasegawa, M.Uda, S.Yoshimura, J.Kondo, T.Nakagawa, S.Nishimoto
Chapter V-2
Decorative Program at Malqata Palace, Egypt
   Shin-Ichi Nishimoto

Chapter V-3
X-ray Archaeology in China
   Changsui Wang

Chapter V-4
The Relationship between Arts and Sciences in the Field of Archaeology: From Cooperation to a Truly Equal Partnership
   Sakui Yoshimura

Index

271 275 291
X-rays for Archaeology
Uda, M.; Demortier, G.; Nakai, I. (Eds.)
2005, IX, 308 p., Hardcover
ISBN: 978-1-4020-3580-7