

# Contents

## **Part I Nanostructuring in Ancient Materials**

**Lustre and Nanostructures—Ancient Technologies Revisited. . . . .** 3  
Trinitat Pradell

**Nano-crystallization in Decorative Layers of Greek  
and Roman Ceramics . . . . .** 41  
Philippe Sciau

**Natural Nanosized Raw Materials and Sol-Gel Technology:  
The Base of Pottery Since Millenniums . . . . .** 59  
Philippe Colomban

**Informative Potential of Multiscale Observations in Archaeological  
Biominerals Down to Nanoscale. . . . .** 75  
Ina Reiche and Aurélien Gourrier

**Some Science Behind the Daguerreotype: Nanometer  
and Sub-micrometer Realities On and Beneath the Surface. . . . .** 123  
Patrick Ravines, Lingjia Li, Lisa Chan and Rob McElroy

## **Part II Nanotechnologies and Analytical Strategies to Characterise Cultural Heritage**

**Surface-Enhanced Raman Spectroscopy: Using Nanoparticles  
to Detect Trace Amounts of Colorants in Works of Art . . . . .** 161  
Federica Pozzi, Stephanie Zaleski, Francesca Casadio,  
Marco Leona, John R. Lombardi and Richard P. Van Duyne

**From Archaeological Sites to Nanoscale: The Quest of Tailored  
Analytical Strategy and Modelling. . . . .** 205  
Ludovic Bellot-Gurlet, Philippe Dillmann and Delphine Neff

**Part III Conserve and Protect the Cultural Heritage  
using Nanomaterials and Nanoscience**

<b>Nanoscale Aspects of Corrosion on Cultural Heritage Metals . . . . .</b>	<b>233</b>
Philippe Dillmann	
<b>Alkaline Nanoparticles for the Deacidification and pH Control of Books and Manuscripts . . . . .</b>	<b>253</b>
Piero Baglioni, David Chelazzi, Rodorico Giorgi, Huiping Xing and Giovanna Poggi	
<b>Confined Aqueous Media for the Cleaning of Cultural Heritage: Innovative Gels and Amphiphile-Based Nanofluids . . . . .</b>	<b>283</b>
Nicole Bonelli, David Chelazzi, Michele Baglioni, Rodorico Giorgi and Piero Baglioni	



<http://www.springer.com/978-94-6239-197-0>

Nanoscience and Cultural Heritage

Dillmann, P.; Bellot-Gurlet, L.; Nenner, I. (Eds.)

2016, XVI, 311 p. 128 illus., 85 illus. in color., Hardcover

ISBN: 978-94-6239-197-0

A product of Atlantis Press