



# TECHNOHERITAGE

**2019** **IV INTERNATIONAL CONGRESS**  
SCIENCE AND TECHNOLOGY FOR THE CONSERVATION OF CULTURAL HERITAGE  
SEVILLE MARCH 26-30, 2019

**BOOK OF ABSTRACTS**



# TECHNOHERITAGE

**2019** IV INTERNATIONAL CONGRESS  
SCIENCE AND TECHNOLOGY FOR THE CONSERVATION OF CULTURAL HERITAGE  
SEVILLE MARCH 26-30, 2019

**D. Navas-Carrillo, B. Del Espino Hidalgo, J.A. Rodriguez-Lora, M.T. Pérez Cano**

Heritage conservation and Urban Vulnerability. The system of medium-sized cities of Baetica's Inner Territory

**A. J. Prieto, R. Ortiz, J. M. Macías-Bernal, M. J. Chávez, P. Ortiz**

Artificial Intelligence applied to the preventive conservation of heritage buildings

**M. A. Muñoz González, J. Sanabria Fernández, M. D. Joyanez Díaz, J. Ruiz Jaramillo, E. Jimenez Morales**

Lighting study to preserve of the artworks in historic buildings

**E. Cano, M. Castillejo, B. Ramírez Barat, M. Sanz, M. Martín Gil, M. Bueso, M. Sahnouni, C. Calvo, I. Sarró**

The European Research Infrastructure for Heritage Science (E-RIHS): an infrastructure for an interdisciplinary scientific domain

**A. Doménech-Carbó, J. Peña-Poza, F. Agua, M. García-Heras, M. A. Villegas**

Electrochemical and microstructural study of La-based protective coatings on metal substrates

**M. Sanz, M. Oujja, A. Dal Fovo, A. Martínez-Hernández, R. Fontana, M. Castillejo**

Non-linear laser microscopies for non-destructive analysis of paintings

**C. Machado, M. Vilarigues, T. Palomar**

Durability and stability study of Debitus grisailles

**N. Macro, M. Ioele**

Multi analytical approach to the study of a contemporary artwork from Italian artist Massimo Zuppelli

**E. Parra, M. Martín-Gil, M. A. García, C. Ímaz, M. Bueso, E. Galiana, A. Albar, A. Arteaga, E. García, J. A. Herráez, D. Durán, J. V. Navarro, A. González, L. Llorente, G. de Osma, A. Roquero**

Revealing Mariano Fortuny and Madrazo's Technologies and Materials. Identification of risk factors for conservation

**J.S. Pozo-Antonio, T. Rivas, C. Cardell, A. Dionisio**

Mineralogical, chemical and physical changes of tempera mock-ups subjected to a SO<sub>2</sub>-rich atmosphere

## **Heritage conservation and Urban Vulnerability. The system of medium-sized cities of Baetica's Inner Territory**

D. Navas-Carrillo<sup>1</sup>, B. Del Espino Hidalgo<sup>2</sup>, J.A. Rodríguez-Lora<sup>1</sup>, M.T. Pérez Cano<sup>1</sup>

<sup>1</sup>*Department of Urbanism and Regional Planning, University of Seville. [dnavas@us.es](mailto:dnavas@us.es), [jrodriguez91@us.es](mailto:jrodriguez91@us.es), [tpcano@us.es](mailto:tpcano@us.es)*

<sup>2</sup>*Department of Architectural History, Theory and Composition. University of Seville  
Avda. Reina Mercedes, 41012, Seville. Spain  
[bdelespino@us.es](mailto:bdelespino@us.es)*

### **Abstract:**

The study focuses on medium-sized cities, a system of urban settlements which dates back to more than two thousand years. Specifically, the case study is defined in Andalusia, the most populous and the second largest region in Spain, considering the Valley of Guadalquivir River as a geographical framework. In particular, the Andalusian urban system is substantially characterized by the historic importance of this type of cities within its territorial organization. Its relevance has been shown by historical cartography both at national and international scales.

Twenty-six out of these cities have been declared as cultural heritage sites due to their spatial and landscape configuration, as well as to the relevant examples of civil, military or religious architecture they hold. However, the conservation of these assets be conditioned by a high exposure to certain risks and uncertainties, in relation to socio-demographic, socioeconomic or residential aspects. In this sense, these cities may be affected by certain fragile urban conditions which, when applied to a social space, may put at risk the transmission of historical urban fabric to future generations. Particularly, the project proposes to adopt the methodology implemented by the Ministry of Development in the Atlas of Urban Vulnerability to detect conditions of the social and structural disadvantage of the population of the abovementioned cities for effective cultural heritage tutelage.

The current territorial discourse defends a polycentric model, in which the system of medium-sized cities is being strengthened, as their scale makes them a priori more humane and accessible in comparison to large ones. However, the study shows that most medium-sized cities have high rates of economic vulnerability probably caused by their traditional characterization as agrarian cities. In this sense, it is particularly interesting to analyze the response of these cities compared to their regional centres. For this purpose, the information from the 2011 Population and Housing Census provided by the Spanish National Statistics Institute (INE) have been objectively analyzed through fifteen urban indicators. These data have been clearly addressed by means of geographic information systems (GIS).

We believe that a process to systematically analyze the vulnerability of these historical cities could help public administrations to develop specific policies to solve those detected weaknesses. Therefore, acting in reducing the urban vulnerability would result in a better and more efficient organizational capacity as a collective to manage the conservation of the cultural heritage of our cities.

Please select your preference	
Poster	Oral X

ISBN

978-84-09-08757-0

Editor

Francisco Pinto Puerto

Layout

Andrades Borrás, Mercedes  
González Gracia, Elena  
Mesa García, Cristina  
Manuel Gonçalves González, Víctor  
Massaro Jiménez, Sandro  
Moya Muñoz, Jorge  
Muñoz Pérez, Jesús  
Torres González, Abián  
Valcárcel García, Pablo

Design

González Gracia, Elena  
Moya Muñoz, Jorge

## Organizers:



Instituto Andaluz del Patrimonio Histórico  
CONSEJERÍA DE CULTURA Y PATRIMONIO HISTÓRICO

## Collaborators K



Unión Europea

Fondo Europeo de Desarrollo Regional  
"Una manera de hacer Europa"

## Sponsors:



