

# COLOQUIOS 2018



**CSIC**  
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

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**Comunidad  
de Madrid**

## Dr. Marco Leona

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The Metropolitan Museum, New York*

### **“The Cultural Meanings of Color: Raman Spectroscopic Studies of Red, Pink and Purple Dyes in Late Edo and Early Meiji Period Japanese Woodblock Prints”**

Can Raman spectroscopy provide insights into the cultural meanings of color in the transformative era experienced by Japan between the end of the Edo and the beginning of the Meiji periods? In recent years, Raman and surface-enhanced Raman spectroscopies have demonstrated their wide potential for the detection and identification of pigments and dyes. To characterize the changes in aesthetics and popular taste accompanying the modernization of Japan in the second half of the 19th century, a detailed SERS study of colorants in woodblock prints was carried out at the Metropolitan Museum of Art. The now routine application of SERS to art analysis was complemented by the development of novel sample treatment protocols to characterize the coloring materials and corresponding degradation products found in woodblock multicolor nishiki-e printed between 1859 and 1894. Prints dated to this time period contain bright red, pink and purple colors. Raman spectroscopy has proven particularly valuable in the investigation of series of acid red dyes, which have been incorporated in a spectral database to be used in identification studies. On the other hand, surface-enhanced Raman spectroscopy has been applied to the characterization of red and pink natural and synthetic colorants, such as safflower red, carmine, eosin Y, as well as mixtures of the last two. Additional materials studied include magenta and purple aniline dyes and their degradation products. The results of this scientific study further expand the range of applications of Raman spectroscopy for the study of artists' materials.

**Viernes 27 de octubre de 2017 a las 12:00 h**

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