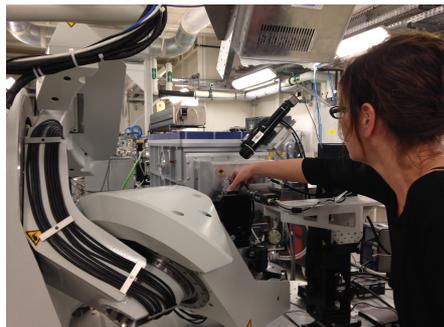


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Research interests:

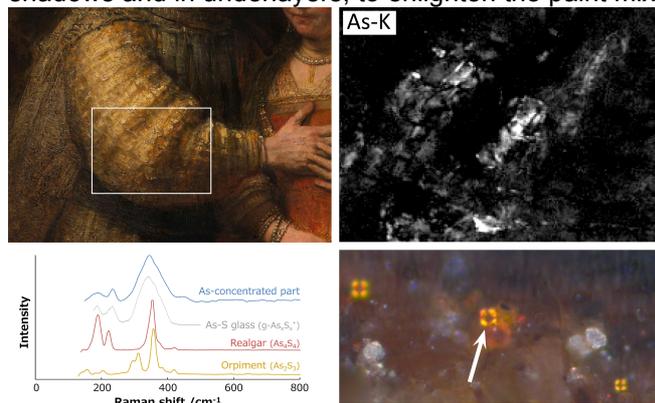
Materials analysis and ageing and deterioration processes in Old Master Paintings

ReVISualizing Late REMBRANDT: Developing and Applying New Imaging Techniques

RECENT RESEARCH ACTIVITIES:

Discovery of Artificial Orpiment in *The Jewish Bride* by Rembrandt

The X-ray fluorescence map of arsenic, supported by in-situ Raman and cross-section analysis, revealed the use of an artificial arsenic sulphide glass, a pigment not earlier associated with Rembrandt's palette, in *The Jewish Bride* by Rembrandt (c.1665, Rijksmuseum): in the red dress of Rebecca and the yellow sleeve of Isaac. It was used in the half-shadows and in underlayers, to enlighten the paint mixtures.



Museum Visitors Witnessing the MA-XRF Scanning of *Claudius Civilis*



The painting of *Claudius Civilis* by Rembrandt (1661-62, measuring 196 by 309 cm), owned by the Royal Academy of Fine Arts, Sweden, and on temporary loan to the Rijksmuseum, was recorded in-situ, in the Gallery of Honour of the Rijksmuseum, with a mobile macro-X-ray fluorescence

scanner during 20 days, pixel by pixel, line by line, while the museum visitors could watch the scanning process. Gallery talks were given in which the macro-X-ray fluorescence technique was explained. The resulting elemental maps revealed new insights into the many compositional changes made by Rembrandt himself, and the use of smalt, a blue cobalt glass pigment, in the now brown, degraded paint areas of the turban, clothing and background.

KEY PUBLICATIONS:

- A. van Loon, P. Noble, A. Krekeler, G. Van Der Snickt, K. Janssens, Y. Abe, I. Nakai, J. Dik, 'Artificial orpiment, a new pigment in Rembrandt's palette', *Heritage Science* 126 (2017) 5:26
- K. Langstraat, A. Knijnenberg, G. Edelman, L. van de Merwe, A. van Loon, J. Dik, A. van Asten, 'Large area imaging of forensic evidence with MA-XRF', *Nature Scientific Reports*, (2017) 7:15056

OTHER ACHIEVEMENTS:

- Conference presentation: 'The use of smalt in Rembrandt's Homer', *Technart 2017*, Bilbao, 4 May 2017
- Conference presentation: 'MA-XRF scanning in the museum: practical and safety issues', *IAEA Technical Meeting on developing strategies for safe analysis of paintings and paint materials*, Van Gogh Museum, Amsterdam, 29 juni 2017