

Physical-chemical characterization of the electrodeposited printing plates from the early 1840 in Vienna

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An unusual group of objects housed by the Technisches Museum Wien (Vienna, Austria), a wooden cabinet from the laboratory of Franz Theyer, was recently rediscovered. It contained first examples of printing plates produced by electroplating in Austria [1]. Moreover, this cabinet contained numerous newspapers, brochures, and handwritten documents about electrotyping, and test prints from the early 1840s. An extensive physico-chemical characterization of the manufacturing processes, the surface structure, the chemical composition, and the corrosion status of the various plates was performed.



Special focus was on non-destructive diagnostic methods [2]. A prominent example is the electrotype engraving copper plate “St. Joseph” (1843, Vienna, Fig.). The chemical nature of organic coatings was analyzed by means of attenuated total reflectance FT-IR spectroscopy and GC-MS analyses for the presence of lipid and resin binding media. Ultraviolet, visible and infrared reflection, but also visible fluorescence imaging investigations in the spectral range from 320 nm to 1550 nm were undertaken to investigate their surface distribution.

[1] V. Ljubić Tobisch, H. Weitensfelder, and W. Kautek, *Blätter für Technikgeschichte*, 74 (2011) 135–161.

[2] A. Doménech-Carbó, M. T. Doménech-Carbó, and V. Costa, *Electrochemical Methods in Archaeometry, Conservation and Restoration*, Springer (2009).