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**Article:** Pigment-Based Photographic Processes: A Technical Study of Pictorialist Works in the Metropolitan Museum's Collection (Abstract)

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## **Pigment-Based Photographic Processes: A Technical Study of Pictorialist Works in the Metropolitan Museum's Collection**

**Anna Vila, Andreas Gruber, Silvia A. Centeno, Lisa Barro, Nora W. Kennedy**

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By the late 1800s, photography had become highly manufactured, standardized, and accessible to the public. Pictorialist photographers countered this popularization of the medium by turning to meticulously hand-crafted processes that allowed them full control and flexibility to express their creativity [1-3]. These artists printed one-of-a-kind works by using a variety of specialized techniques. They hand-coated papers, locally manipulated images, used multiple negatives, and often layered one process on top of another. Among the processes most commonly used during this period were gelatin silver, platinum, palladium, cyanotype and numerous pigment-based techniques, such as gum dichromate, direct carbon, carbon-transfer, bromoil, bromoil transfer, and ozotype.

The definitive identification of gum prints has proven to be a challenge due to the many variations and intermingling of processes used by photographers during this period. This research began with an investigation of the historic sources, followed by the creation of test samples strictly based on historic recipes, and the chemical analysis of these tests [4]. In the past, the presence of pigments and the identification of chromium have been directly associated with a gum dichromate or other dichromated colloid processes. Results of this research revealed that the presence of chromium and pigment has more complex sources, requiring a more discriminating approach and a modified protocol for the definitive identification of gum dichromate photographs. This protocol combines XRF, FTIR, in transmission and/or ATR, and Raman analysis and has shed light into the photographic techniques used in a number of Pictorialist works in the Metropolitan Museum's collection [5].

- [1] Naef, Weston J. *The Collection of Alfred Stieglitz: Fifty Pioneers of Modern Photography*. New York: The Metropolitan Museum of Art, 1978.
- [2] Crawford, William. *The Keepers of Light: A History and Working Guide to Early Photographic Processes*. Dobbs Ferry, NY: Morgan and Morgan, 1979.
- [3] Bunnell, Peter C. *A Photographic Vision. Pictorial Photography, 1889-1923*. Salt Lake City: Peregrine Smith, Inc., 1980.
- [4] Vila, Anna; Centeno, Silvia A.; Barro, Lisa; Kennedy, Nora W. Understanding the gum dichromate process in pictorialist photographs: A literature review and technical study. *Studies in Conservation* 2013 58(3) pp. 176-188.
- [5] Vila, Anna; Centeno, Silvia A. FTIR, Raman and XRF identification of the image materials in turn of the 20th century pigment-based photographs. *Microchemical Journal* 2013(1) pp 106:255.

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