

Shining Through: Multi-Analytical Studies of the Tiffany Hartwell Memorial Window

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The glassworks produced by Louis Comfort Tiffany's glass and decorating firms in the late 19th and early 20th centuries are some of the most distinctive and iconic examples of iridescent glass. Under the name Tiffany Glass Company, Tiffany Glass and Decorating Company, Allied Arts, and Tiffany Studios, Tiffany and his extensive team produced a wide variety of decorative and functional objects, most notably lamps and stained-glass windows. Tiffany was widely heralded for his innovation, particularly in the production of colored glass, but the recipes used to produce the firms' glass are still relatively understudied from a scientific point-of-view. Additionally, Tiffany relied to some extent on external production houses like Opalescent Glass Works (now Kokomo Opalescent Glass) in Kokomo, Indiana but a number of questions remain as to how extensive this practice was. The present study employs a combinatorial analytical approach to identify colorants and determine glass composition to better understand—both qualitatively and quantitatively—the materials and the processes employed in the production of Tiffany glass and to potentially differentiate those produced by other glass firms. For this study hyperspectral imaging, Raman microscopy, scanning electron microscopy with wavelength dispersive X-ray spectroscopy, and laser ablation inductively coupled plasma mass spectrometry are used in concert on samples taken from Tiffany Studios' Hartwell Memorial Window, a monumental stained glass in the collection of the Art Institute of Chicago. These analytical results will be compared and contrasted with those obtained from samples of glass produced contemporaneously by other firms, including Opalescent Glass Works. Further, these studies will incorporate archival sources, where possible, to better understand how these analytical results fit within the art historical record of the practices employed at these important glasswork firms. The present work is conducted on behalf of the Center for Scientific Studies in the Arts, a joint collaboration between Northwestern University and the Art Institute of Chicago.