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# Uncovering Irving Penn's Chemical Treatment Techniques

Laura Panadero

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Irving Penn printed a series of gelatin silver photographs in 1949 and 1950, titled the *Nudes*. Regarded as a departure from the smooth, sleek forms and thin models of his fashion photography, these photographs were a chance for Penn to revel in the material possibilities of the medium. In particular, Penn was intrigued by how the photographic image could be manipulated in the darkroom to produce variable densities, ranges in image tone, and even alteration of the gelatin binder. Available sources suggest he used non-standard chemistry, specifically a bleach-and-redevelopment technique, which produced the unique visual characteristics of the *Nudes*. However, these sources, as well as the photographer's archival records from the series, include very little technical information about his process. This research was undertaken in the hopes of better understanding the material modifications Penn brought about in this body of work. This paper presents the findings of research into possible darkroom methods used for the *Nudes* series.

The available art historical literature on Penn proposes a bleach-and-redevelopment process, and offers a citation for the photography manual from which Penn and his printer drew their recipes. Using this as a starting point, several hypotheses were developed for potential bleaching procedures. These hypotheses were further refined after a survey of the *Nudes* in the collection of the Metropolitan Museum of Art, and following an interview with the printer, now in his 90s. The hypotheses sought to explain both the general technique and the specific chemistry that was used. Ultimately two bleach-and-redevelopment process were tested, as well as one process using bleaching alone.

This paper outlines the evidence in favor of, and against, each of these three darkroom techniques, including historical information, the chemical mechanisms of each, and the results of replication experiments which have been performed for each process. Preliminary XRF measurements are also presented. XRF has shown potential as a method for identifying certain bleach-and-redevelopment treatments whose chemistry may leave elemental markers in the finished print, possibly in the form of non-silver image material. The research conducted thus far has been inconclusive, but has provided a more complete understanding of the material complexity of the *Nudes*, and of the great artistry involved in their printing.

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