

## Laser cleaning of historical postage stamps and stationery

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Laser cleaning of historical postage stamps and stationery can serve as a representative case study of paper substrates which exhibit complex combinations of printed pigment coatings, postmarks and old contaminations. Five historical samples were chosen consisting of three stamps (6 and 9 Kreuzer; Austrian "kk Poststempel" from Teplitz), stamped ink lines on stationery, and a historical Austro-Hungarian stationery. The laser treatment was performed with 532 nm at a pulse length of 5ns. The paper, contamination and ink destruction thresholds were determined by a well-proven systematic methodology [1-5]. The substrate destruction thresholds were about one order of magnitude higher than the removal/ablation of print or contamination providing a large cleaning window. The consequences of the ablation threshold overlaps of print, dirt stains and black ink are discussed.

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