



Universität
Basel

Research Project

Dust BW: Detection of dust and scratches on photographic silverhalide (black/white) material by polarized darkfield illumination

Third-party funded project

Project title Dust BW: Detection of dust and scratches on photographic silverhalide (black/white) material by polarized darkfield illumination

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Organisation / Research unit

Fakultär assoziierte Institutionen / Imaging techniques (Gschwind)

Department

Project start 01.09.2010

Probable end 31.08.2013

Status Completed

The goal of this project is to investigate a solution for one special problem, the elimination of dust and if necessary scratches on any kind of scanned transparent photographic material (movie, still photographs, b/w and color) by detection of dust through a new optical scanning system consisting of polarized dark field illumination. By this approach the diffracted light of the fined grain silver can be suppressed whereas the diffracted light of dust and scratches are still visible. The novelty is that the combination of these two techniques has never been done before, i.e. we use physical knowledge of light polarization, scattering, dark field illumination, emulsion composites in an innovative way to solve an old problem in photography, namely how to get rid of dust. Applying appropriate threshold techniques that combines dark field image and regular scan and image processing techniques (in-painting) to remove dust will give restored images that appear correct and natural.

Keywords Movie Film Restoration, Digital Preservation, Inpainting, Cultural Heritage, Computational Photography

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