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Research specimen on diazotype

2 prints A4 specimens of red diazotypes developed using the coupler β - naphthol

Associated research projects:
Pure Print (2013-2019), coordinated by Graciela Machado. / GroundLab (2020 - present) SHS - Soil Health Surroundings Former Mining Areas (NORTE-01-0145-FEDER-000056)

Reseachers
Graciela Machado (IP: I2ADS/FBAUP); Artur Prudente (MAP / FBAUP).; Marta Bełkot (2021-2022), Cristiana Macedo (2022)

Illustrations
Artur Prudente

Diazotype is the use of aromatic diazonium salts in conjunction with coupling chemical elements to create a photosensitive surface on a paper or fabric. The diazo compound was discovered in 1860 by P. Griess[1], who observed a great capacity of this substance to generate diverse dyes in combination with other coupling elements. Its functioning is due to two characteristics of diazonium salts: their ability to react with coupling elements to generate a dye; on exposure to light, they lose their coupling ability[2].

The research on reprographic systems techniques based in this topic began with Ozalid: Entre Cópia e Original[3], a project focusing on Fundação Marques da Silva architectural archives. Ozalid paper was developed from 1890 onwards by Gustav Kogel in Germany[4], who coined the name, an anagram of the name of the diazol compound. The Ozalid paper purchased only needed to be exposed and developed using ammonia

1 Eder, M. J. (1978). History of photography, p. 550-551

2 Pai, D.M., Melnyk, A.R., Weiss, D.S., Hann, R., Crooks, W., Pennington, K.S., Lee, F.C., Jaeger, C.W., Titterington, D.R., Lutz, W., Bräuninger, A., de Brabandere, L., Claes, F., de Keyzer, R., Janssens, W. and Potts, R. (2017). Imaging Technology, 2. Copying and Non Impact Printing Processes. In Ullmann's Encyclopedia of Industrial Chemistry, (Ed.). p. 29-31.

3 Machado, G (Coord.). OZALID: ENTRE CÓPIA E ORIGINAL, PURE PRINT, FBAUP/ I2ADS, unidade de investigação em Arte e Design e Sociedade, setembro de 2020, novembro de 2021

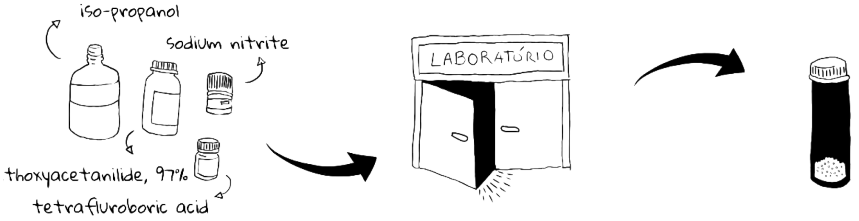
4 Idem as nº2

gas, and was quick and easy to use.

From this first moment using industrial materials available in the market, the possibility of preparing the papers themselves was planned, starting with the production of the necessary base chemical elements to create the light sensitive emulsion (2022-2023). This was done based on Fabio Parmeggiani[5] work proposing the use of chemistry far less toxic than the original formulas and with the support of the junior researcher Natércia Teixeira from FCUP. The production of the diazonium salts was carried out in the FCUP chemistry laboratory followed by the preparation of emulsions at FBAUP's printmaking workshop using different coupling elements, it's application on paper and the prepared paper exposure and development.

5 "Fear of the Dark: Diazo Printing by Photochemical Decomposition of Aryldiazonium Tetrafluoroborates", disponível em: https://pubs.acs.org/doi/10.1021/ed400555a

Preparation of the diazonium Salt



Emulsion preparation

Application, exposure and development