

CHEMICAL HERITAGE FOUNDATION

ROLF DESSAUER

Transcript of an Interview
Conducted by

Sarah L. Hunter-Lascoskie and Hilary L. Domush

at

Dessauer's Home
Wilmington, Delaware

on

7-8 August and 1 October 2012

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION

Oral History Program
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Center for Oral History
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ROLF DESSAUER

1926 Born in Nuremberg, Germany on 3 November

Education

1948 B.A., Chemistry, University of Chicago
1949 M.S., Chemistry, University of Chicago
1952 Ph.D., Chemistry, University of Wisconsin, Madison

Professional Experience

E. I. DuPont de Nemours and Company, Wilmington, Delaware
1952-1960 Research Chemist, Organic Chemicals Department
1960-1969 Senior Research Chemist, Organic Chemicals Department
1969-1978 Research Associate, Organic Chemicals Department
1978-1986 Research Associate, Photo Product Department, Photo and
Electronics Department
1986 Senior Research Associate, Imaging System Department

DX Imaging, Lionville, Pennsylvania
1987-1991 Subsystem Manager/Senior Research Associate

1991-2013 Consultant in Photoimaging Technology

Honors

2001 DuPont's Pedersen Award for Development of Hexaarylbiimidazole
Chemistry
2001 DuPont's Plambeck Award for Contribution to Photopolymer Technology

ABSTRACT

Rolf Dessauer was born in Nuremberg, Germany, one of two sons of a physician and a housewife. His family fled to the United States after *Kristallnacht*, eventually settling in Flushing, New York. After service in the U.S. Army, Dessauer received his bachelor's and master's degrees from the University of Chicago, and a Ph.D. in organic chemistry from the University of Wisconsin.

Dessauer began his career at E. I. du Pont de Nemours & Company, working at the Jackson Laboratory on dyes and UV-screening agents. He developed dyes for Alcoa's anodized aluminum, discovered a way to color Teflon, and taught dye chemistry to employees at DuPont's Ducilo plant in Buenos Aires. Although his inventions often met with resistance, his work on UV-screening agents was a commercial success.

Reassigned to DuPont's Experimental Station, Dessauer began work on photochromic materials, leading to imidazole derivatives, which formed stable colored free radicals on exposure to light. When mixed with leucodyes, these hexaarylbiimidazoles (nicknamed HABIs) produced colors. The project was called ultraviolet imaging (UVI) and it initially generated interdepartmental enthusiasm. By exposing a coated paper to ultraviolet light—or visible then UV light—one could form negative- or positive-mode images. Paper was coated on both sides; the product thus produced was named Dylux 503 proof paper and it found wide acceptance in the printing industry from 1969 to 2010. Additionally, HABIs were found to be useful in photoinitiating polymerization, leading to successful color proofing systems and a family of photoresists; under certain conditions, coatings containing HABIs promoted changes in adhesion.

Dessauer's job then was to find other uses for HABIs. He developed photodecoration for leather and for furniture, early bar code labels, color cathode ray tubes, and an identification system for patients' specimens at Georgetown University. Again, Dessauer had to fight for support for his projects. There are now at least eighteen hundred U.S. patents involving the HABI family, most of the first four hundred of them granted to DuPont.

Dessauer had been at DuPont for thirty-five years when DuPont and Xerox formed a new company, DX Imaging (DXI), to market newly invented photopolymer electrography. Dessauer left DuPont to work at DXI, but the company was closed down after three years. He became a consultant for DuPont, Xerox and a number of other companies, including Hewlett Packard, and this work resulted in another patent. Since then Dessauer has also written histories of his work—notably, *Photochemistry, history and commercial applications of hexaarylbiimidazoles: all about HABIs*, published by Elsevier—and he is writing an e-book about color. He also plans to write an entry for Wikipedia. Additionally, with his friend, the late Thomas Gravell, Dessauer made a study of watermarks of early postage stamps and documents, printing on Dylux 503. He and his wife, a long-time friend from Germany, visit Philadelphia often, exploring restaurants and theaters. He keeps up with the biimidazole literature and is still thinking about the unsolved problem of tackiness. He has contributed records of his work to the Hagley Museum and Library.

Dessauer bemoans the current lack of long-sightedness at DuPont; to him, the company seeks to commercialize products rapidly or lose interest in the technology. He points out that commercialization of Dylux technology took about eight years, and he feels that there were many projects that would have succeeded commercially with just a little more time and some

support. He says that the policy of moving managers around frequently meant that people who did not fully understand the field made important policy decisions. Furthermore, important experience is being forgotten or discounted because of rapid technological changes. He does, however, name a number of “heroes” from DuPont, many of them friends for life. Dessauer believes that his main contribution is to have kept alive this chemistry, fighting for support in often-hostile environments. He points out that he was lucky to have good health, enough resources to get by, and a personality that led to a large network. Despite all his complaints, he had fun finding uses for dyes. Asked if he would do it all again, he says yes; in fact, he would go back to work right now, if he could.

INTERVIEWERS

Sarah L. Hunter-Lascoskie earned a BA in history at the University of Pennsylvania and an MA in public history at Temple University. Her research has focused on the ways in which historical narratives are created, shaped, and presented to diverse groups. Before Sarah joined CHF, she was the Peregrine Arts Samuel S. Fels research intern and Hidden City project coordinator. Sarah worked both in the Center for Oral History and the Institute for Research at CHF and led projects that connected oral history and public history, producing a number of online exhibits that used oral histories, archival collections, and other materials. She also contributed to CHF’s *Periodic Tabloid* and *Distillations*.

Hilary L. Domush was a Program Associate in the Center for Oral History at CHF from 2007-2015. Previously, she earned a BS in chemistry from Bates College in Lewiston, Maine in 2003. She then completed an MS in chemistry and an MA in history of science both from the University of Wisconsin-Madison. Her graduate work in the history of science focused on early nineteenth-century chemistry in the city of Edinburgh, while her work in the chemistry was in a total synthesis laboratory. At CHF, she worked on projects such as the Pew Biomedical Scholars, Women in Chemistry, Atmospheric Science, and Catalysis.

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