

## Ed Rutter



Senior Principal Process Engineer at Finisar  
Semiconductors

<http://www.directoryinventor.com/profile/view/3gnB0Upe>

## Experience

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### Senior Principal Process Engineer

Finisar

Semiconductors

May 2012 - Present

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### Technology Leader

Honeywell specialty Chemicals

10,001+ employees; Public Company; Chemicals

March 2007 - May 2012

Technology Leader: EUV Underlayers & Novel Hardmask Technology - Development of Si-containing BARCs for advanced lithography - Development of planarizing organic and inorganic thermosetting thin films for microelectronic and optical applications - Polymeric, low temperature curable materials for applications using flexible or plastic substrates Honeywell Electronic Materials 1349 Moffett Park Drive Sunnyvale, CA 94089

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### Senior Staff Process Engineer

Intel Corporation

10,001+ employees; Public Company; Semiconductors

May 2004 - September 2006

Defect reduction covering FEOL, mid-section and BEOL process for 90 nm and 65 nm flash processes. Main working focus was in the lithography and wet cleans functional areas, but worked with all groups including integration, yield, thin-films/diffusion, dry-etch, wet-etch, ash/DUV cure, litho, planar and implant.

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### Research & Product Development Manager/Principal Scientist

Shibley Company (Rohm & Haas Electronic Materials)

Chemicals

July 1996 - April 2004

Photoresist formulation covering i-line (365 nm) and DUV (248 nm) resists. Advanced conventional DNQ novolac resists as well as chemically amplified photoresists (positive and negative tone). Development of planarizing crosslinked organic underlayers for via protection as well as formulations to mitigate resist poisoning on CVD carbon doped oxides resulting in two patents Formulation of single wafer wet cleaning chemistry working with a key customer and OEM that displaced the incumbent and won business over a 6 month period of time. Member of the Emergency Response

## Team

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### **Project Chemist**

#### **Dow Electronic Materials**

10,001+ employees; Public Company; Chemicals  
June 1989 - July 1996

Development of photodefinable BCB materials. Project moved from conception to commercialization in five years resulting in two commercial formulations (5 m and 10 m). Involved in all aspects of project from formulation, to producing specialized formulated organic solvent developers and strippers to implementation of processes at customer sites. Member of the Emergency Response Team

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## **Education**

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### **University of Wisconsin-Madison**

Inorganic Chemistry; Minor: Organic Chemistry  
1983 - 1989

Thesis: Synthesis, Characterization and Reactivity of Rhenium-Platinum Dihydrides Advisor: Professor Charles P. Casey

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### **University of Delaware**

Biological Sciences  
1982 - 1983

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### **University of Delaware**

Chemistry  
1978 - 1982

Activities and Societies: Undergraduate research in biochemistry (with Donald Wetlaufer) and inorganic chemistry (with John E. Bulkowski) Summer internship in Marine Chemistry with Charles H. Culberson

Concentrations: Biochemistry, Organic Chemistry; Inorganic Chemistry

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### **William Penn High School**

Academic  
1974 - 1978

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## **Patents (5)**

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### **Processable inorganic and organic polymer formulations, methods of production and uses thereof**

Edward Rutter, Ahila Krishnamoorthy, Joseph Kennedy  
March 3, 2011: 20110054119-A1

## **Stripping method (16 worldwide citation)**

Edward W Rutter Jr, Cuong Manh Tran, Edward C Orr  
April 12, 2005: 06878500

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## **Polymer remover**

Edward W Rutter  
November 18, 2004: 20040229762-A1

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## **Stripper**

Edward W Rutter  
November 4, 2004: 20040220066-A1

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## **Aperture fill (13 worldwide citation)**

Edward W Rutter Jr, Peter Trefonas III, Edward K Pavelchek  
October 8, 2002: 06461717

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[View all \(5\)](#)