

SCHOTT is an international technology group developing and manufacturing specialized materials, components and systems particularly for the household appliance, pharmaceutical, solar energy, electronics, optics and automotive industries. Some 17,300 employees at manufacturing and sales sites in 41 countries generated global sales of 2.2 billion euros during the 2007/2008 fiscal year.

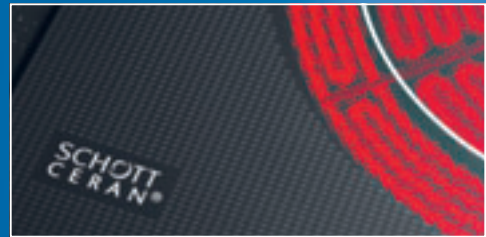
**Our innovative technologies  
have made history in glass.  
For 125 years  
and on into the future.**

**SCHOTT AG**  
Corporate Public Relations  
Hattenbergstraße 10  
55122 Mainz  
Germany  
Phone: +49 (0)6131/66-4086  
Fax: +49 (0)3641/28889141  
E-mail: [info.cpr@schott.com](mailto:info.cpr@schott.com)  
[www.schott.com](http://www.schott.com)

**SCHOTT**  
glass made of ideas

## SCHOTT 1884–2009

Historical and Technological  
Milestones



90328 ENGLISH 010910.0 kom/ben Printed in Germany



**SCHOTT**  
glass made of ideas

# Historical Milestones

**1884**

Otto Schott, Ernst Abbe and Carl and Roderich Zeiss found the Schott & Associates Glass Technology Laboratory in Jena, Germany.

**1889**

Ernst Abbe founds the Carl-Zeiss-Stiftung (Carl Zeiss Foundation).

**1891/1919**

The glassworks in Jena become a foundation-owned enterprise. Its sole owner is the Carl-Zeiss-Stiftung.

**1900**

SCHOTT already achieves half of its sales with exports.

**1927/1930**

The first subsidiaries:  
Farbenglaswerke Zwiesel und Pirna (1927),  
Deutsche Spiegelglas AG (DESAG)  
in Grünenplan (1930),  
Glaswerk Mitterteich (1930).

**1945**

“The Odyssey of 41 Glassmakers“: After the end of World War II, American troops bring the management and selected experts from Jena to West Germany.

**1948**

The original factory in Jena (Soviet zone of occupation/GDR as of 1949) is expropriated and converted into a state-owned company (VEB).

**1952**

The foundation enterprise is rebuilt in Mainz (Federal Republic of Germany) under the direction of Erich Schott, the son of the company’s founder. Mainz becomes the headquarters and main production site of the SCHOTT Group.



Otto Schott Ernst Abbe



Erich Schott



**1954**

First production subsidiary outside of Germany (Vitrofarma in Rio de Janeiro, Brazil).

**As of 1963**

Establishment of production plants and sales offices in Western and Southern Europe. A sales office is opened in the U.S. (New York City). SCHOTT grows to become an international group of companies.

**1966**

First sales office in Asia (Tokio, Japan).

**1969**

First production plant in the U.S. (Duryea, Pennsylvania).

**1974**

First production plant in Asia (Penang, Malaysia).

**1989**

The Otto Schott Research Center in Mainz is put into operation.

**1991/1995**

With the reunification of Germany, SCHOTT in Mainz takes over the ownership of the old main plant in Jena. The factory is renovated, restructured and integrated into the SCHOTT Group.

**As of 1993**

Establishment of production plants and sales offices in Eastern Europe.

**2002**

First production plant in China.

**2004**

Conversion of the foundation enterprise to the corporation SCHOTT AG. Its sole shareholder is the Carl-Zeiss-Stiftung.

**2009**

125 year anniversary of SCHOTT.



1884  
1945  
1952  
1963  
1989  
2009

# Technological Milestones



**1884**

Otto Schott develops new optical glasses and provides the scientific basis for developing specialized glasses.

**1884**

Glass tubing for thermometer and water gauge glasses.

**1887/1893**

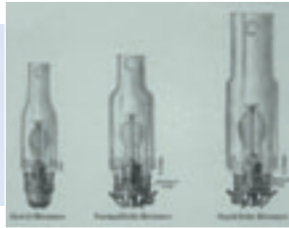
Invention of chemically resistant borosilicate glass that is able to withstand high temperatures and immediate shifts in temperature.

**1894**

Casting of large scale optical disks up to 140 cm in diameter for astronomical telescopes.

**1895**

Extremely durable cylinders made of borosilicate glass help the Auer incandescent lighting achieve its breakthrough.



**1908**

Glass tubing for pharmaceutical ampoules, which are distributed under the brand name **FIOLAX®** starting in 1911.

**1911**

SCHOTT becomes the world's first specialized glass manufacturer to adopt continuous melting in tanks.

**1914**

Processed flat glasses for the household appliance industry.

**1918**

Market launch of heat resistant household glasses that are marketed under the brand name **JENA® GLAS®** as of 1921.



**1923**

Automated and continuous drawing of glass tubing based on the Danner process.

**1923**

Pharmaceutical ampoules, initially manufactured by hand, are manufactured by machine starting in 1928.

**1930**

Automated and continuous drawing of flat glass based on the Fourcault process.

**1935**

Manual production of television bulbs.

**1938**

Development of the first coating techniques.

**1939**

Glass-to-metal seals for electrotechnology.

**1950**

**DURAN®** laboratory glass becomes the new universal glass for the chemistry laboratory.

**1955**

Fully automated production of television glass components and hollow glass.

**1957**

Optical glasses from Mainz and Jena are put to use in both American and Soviet aerospace applications.



**1964**

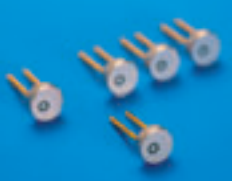
Fiber optic components for light and image guides. The main application fields are medical technology and lighting technology.

**1968**

**ZERODUR®** glass-ceramic introduces a new era of telescope mirror substrates for astronomy.

**1969**

Optical glasses from SCHOTT in television and photo cameras deliver spectacular photos and television images of „Apollo 11“, when Neil Armstrong and Edwin Aldrin become the first human beings to walk on the moon.



**1969**

Glass-to-metal seals for automotive applications.

**1973**

Light weight eyeglass lenses result in improvements for eyeglass wearers.



**1973**

**SCHOTT CERAN**® glass-ceramic cooking surfaces make their way into kitchens worldwide.

**1978**

**PYRAN**® fire resistant glass.

**1979**

The first dust removal system is put into operation on a glass melting tank. In the years that follow, SCHOTT sets standards in environmental protection.

**1979**

**ROBAX**® transparent glass-ceramic for window panels in stoves and fireplaces.

**1983**

Glass tubing for solar thermal power plants based on parabolic trough technology.

**1985**

Anti-reflective **AMIRAN**® glass for glazing shop display windows, for example.

**1986**

Electronic packaging components for aviation technology.

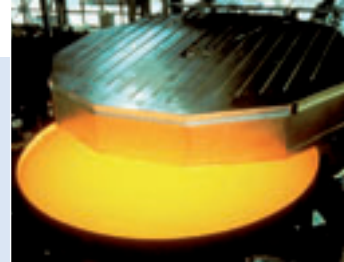


**1989**

Expansion of expertise in processing flat glasses for the household appliance industry by founding joint ventures with the float glass manufacturers Glaverbel (Belgium) and Gemtron (U.S.A.).

**1991/1996**

Manufacturing of **ZERODUR**® telescope mirror substrates with a diameter of 8.2 meters for the Very Large Telescope (VLT) in Chile, using the centrifugal casting process.



**1993**

Thin glasses with thicknesses that start at only 0.03 mm help advance flat display technology.

**1994**

Serial manufacturing of borosilicate glasses for a wide variety of applications using the microfloat process.

**1996**

Internally coated **SCHOTT Type I plus**® pharmaceutical vials.



**1998**

Calcium fluoride crystals for use in manufacturing chips.

**2001**

Entry into photovoltaics. The roots and technological expertise SCHOTT Solar has in the field of photovoltaics go back to the year 1958.

**2002**

**SCHOTT CERAN**® glass-ceramic cooking surfaces without harmful heavy metal additives.

**2002**

Serial manufacturing of prefillable polymer syringes.

**2004**

Backlighting glass tubes, used for background illumination of displays.

**2005**

Market launch of solar receivers for solar thermal power plants based on parabolic trough technology.



**2008**

Nomination of the solar receiver as one of three very important innovations for the German Future Prize by Germany's Federal President Horst Köhler.