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## FUNDS for

Schott invests around 100 million euros in research and development every year. A considerable amount of support is also provided for external scientific work. Board member Dr. Udo Ungeheuer is responsible for research. Here he discusses the motivation behind and prospects for Schott's research activities.

*There is a long tradition of support for research at Schott. Why does this money go to outside institutions?*

Our close links with science and research have their origins in our corporate history. The company was established in 1884 as a "Glass Technology Laboratory". Since that time, applications-oriented research and involvement with high-technology based on special glass have been of central importance. Further, we are committed by our corporate constitution, the statute of the Carl-Zeiss-Stiftung, to provide support for major areas of science and technology not only within the foundation's businesses, but also outside. We are fully committed to this obligation.

*What support does Schott provide?*

Our resources are used to provide continuous support for gifted students and young scientists, especially in the applied sciences, to support research projects at universities or colleges of interest to us as well as doctoral work in the field of glass and glass-ceramics. In addition, these resources enable research outside of Germany. One of the most recent examples of this is a project, backed by a grant of 50,000 euros, by

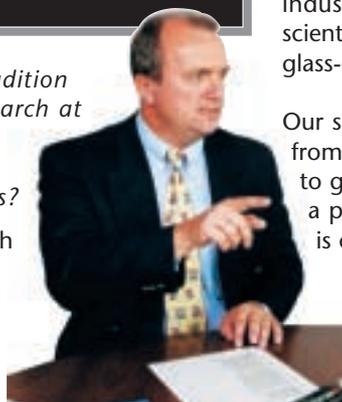
Nobel Prize winner Prof. Paul Crutzen of the Max Planck Institute for Chemistry in Mainz on the subject of ozone formation (see Schott info 90/99).

The Otto Schott Research Prize is financed from the Ernst Abbe Fund. The target of this prestigious award, which is highly regarded in the glass industry, is to support outstanding scientific work in the field of glass and glass-ceramics and similar materials.

Our support, therefore, spans the range from highly experienced top scientists to grammar-school students who have a passion for experimentation. Schott is one of the sponsors of the regional "Youth Research" competition and also provides generous (material) support for local schools in their teaching of natural sciences.

*Why was the Otto Schott Research Prize for Glass Science created?*

In 1988 the Carl-Zeiss-Stiftung established the Ernst Abbe Fund and provided it with one million euros. The fund is used to finance the Otto Schott and Carl Zeiss Research Prizes, each worth 25,000 euros. They are awarded each year on an alternating basis to provide motivational support for cooperation between industry and science. With the Otto Schott Research Prize, our aim is to make a wider public aware of outstanding scientific achievements in the whole field of glass and glass-ceramics in basic research and application and to promote knowledge about the importance of glass science for technical progress. The work honored reflects the internationally high level in the field of glass science.



The promotion of external research is an obligation that we are fully committed to.

# Research

*What sort of cooperation is there with universities?*

Our company has 600 employees engaged in R&D, and the Otto Schott Research Center in Mainz is the most modern glass research facility in Europe – this alone is reason enough for the great interest that exists on both sides in cooperation between academics and industry.



With the Otto Schott Research Center in Mainz we have the most modern glass research unit in Europe at our disposal.

We have worked together with the Friedrich Schiller University in Jena for more than a hundred years and the company regularly provides financial resources through the Carl-Zeiss-Stiftung. We also have a tradition of support and scientific exchanges with the Johannes Gutenberg University in Mainz. One of the reasons the company moved to Mainz in 1952 was the possibility of close cooperation with a renowned university. In addition to one-time contributions such as donations for the purchase of scientific equipment, Schott has contributed since the mid 1980s more than 500,000 euros to support gifted natural scientists from this university.

As required by the foundation statute, we support the universities in the locations where we operate as well as institutions with a glass science orientation.

*What does Schott get out of this external commitment?*

Our aim is to establish more intensive dialogue and cooperation with scientists outside our company and to set up new contacts. Our R&D departments are currently working together with more than 150 scientific partners from universities, institutes and industrial concerns in Germany and other countries.

At the same time the universities give us new impetus from the results of their research work. This cooperation has led more than a few academics to industry and to us.

*Many companies are known for their sponsorship of such things as sport. What is Schott's position on this?*

Our foundation statute stipulates that the main use of our sponsorship resources should be concentrated on the natural sciences and support for non-profit projects in the locations where we operate. In view of its activities in connection with sports we



Our commitment should intensify dialogue with external scientists and establish new contacts.

also support the TSV Schott sport club in Mainz which has around 1,700 members and with its modern infrastructure is also open to people who are not Schott employees.

*Will Schott be able to continue to provide financial support for external research in the future?*

The extent of our commitment depends of course on how successful the company is. We can only distribute what we have earned. In the past, we have increased our external sponsorship on a continuous basis. I am confident that we will continue to do so ■

## Otto Schott Research Prize:

### Milestones in glass science

This prize, which is endowed with 25,000 euros, is awarded every other year, alternating with the Carl Zeiss Research Prize.

Research Prize	Award winner	Subject
1991	– Prof. Werner Vogel, Jena, Germany – Dr. Hideo Husono, Nagoya, Japan	– Use of electron microscopy to clarify “demixing phenomena” in glasses – Investigations into defect structures in glasses plus the development of new phosphate based glasses and glass-ceramics (Schott information 58/91)
1993	– Dr. Dieter Fuchs, Würzburg, Germany – Dr. Phabat K. Gupta, Columbia, USA	– Analyses of damage to glass surfaces, glass sensors for the early detection of corrosion damage – Research into the structural relaxation of glass fibers plus the hardness and brittle breakage behavior of glass
1995	– Dr. David L. Griscom, Washington D.C., USA	– New insights into the structure and properties of glasses and glass-ceramics with the help of electron spin resonance (Schott information 75/95)
1997	– Prof. R.G.C.Beerkens – Dr. A.J. Faber, Ir. H.P.H. Muijsenberg, Ir. F. Simonis (all TNO Institute of Applied Physics Glass Technology), Eindhoven, Netherlands	– Optimization of glass melting processes through mathematical simulation models (Schott information 82/97)
1999	– Prof. Elias Snitzer, Rutgers University, Piscataway, NJ, USA – Dr. John H. Campbell, University of California, Lawrence Livermore Laboratory, Livermore, CA, USA	– Basics of laser glass research – Development of laser glasses for nuclear fusion research (Schott info 91/1999)