



Thursday, 28. September 2023 from 12:30 o'clock:

Company tours (for everyone who can make it on time):

Pfaunder Normag Systems GmbH, Ilmenau



NORMAG - The expert for laboratory and process glass!

Through its expertise in borosilicate glass 3.3, through continuous improvement and close cooperation with the chemical and pharmaceutical industry, Normag has become the market leader for devices for chemical and pharmaceutical processes.

The integration into the Pfaunder Group and thus the expansion of the portfolio with devices and components made of corrosion-resistant materials

such as enamel, fluoropolymers and alloys as well as cutting-edge technologies for stirred tanks, thermal separation, filtration and drying is another opportunity in the chemical engineering market.

The wide range of products includes high-quality components and complete devices and units in borosilicate glass 3.3 for reaction, distillation, evaporation, extraction, filtering and absorption processes in laboratories, for pilot plants and production. The integration into the Pfaunder Group offers further possibilities.

Our team of engineers and technicians, with the experience and expertise it has acquired over the years, can handle projects from design to installation, collaborating with customers to find the most effective and comprehensive process solutions.

EST Andrä Grafittechnik GmbH in Ilmenau



When it comes to processing graphite, EST Andrä Grafittechnik GmbH can look back on a long tradition. In 1928, Gustav Eiternick, Stefan Andrä's great-grandfather, founded the company "O. Gustav Eiternick - Erste Deutsche Werkstätte für Glasbläsereiformen" in Ilmenau. In its long company history, a lot of knowledge and experience has accumulated and EST Andrä Grafittechnik GmbH has gained a good reputation among its customers during this time.

A wide variety of work pieces, semi-finished products and parts are manufactured according to your specifications and drawings. Due to cooperations with well-known manufacturers, there is a wide range of graphite types to choose from. In production, almost every

customer request is realized by sawing, drilling, milling, turning and grinding; from tiny plates to turned parts with a diameter of 500 mm and a length of 2 m.

A wide variety of glassware molds are manufactured in traditional **mold making**. In this process, the glass may be shaped with shaping rollers, **half-moulds** or **folding moulds** Thursday, September 28, 2023 from 6:00 p.m



Meeting at Gesellschaftshaus Sonneberg, dinner, welcome, registration

1st lecture

Friday morning

Sightseeing tour through the city of Lauscha

Lauscha glass school

The history of the glass vocational school is closely linked to the history of the Thuringian glass industry, especially that of Lauscha.

The Glass Lauscha vocational school stands for training that is both up-to-date and traditional. As the only glass blowing school in Europe for Christmas decorations, it sees its tasks in:



- Training of young glassblowers
- Preservation and transmission of traditional methods and techniques in glass blowing
- Further development of the craft in new forms and decors for glass art and Christmas tree decorations
- Exhibitions to show new developments

Farbglashütte Lauscha

With more than 150 years of history, the colour glass workshop is the heart of the glass-blowing town of Lauscha. Glass has been manufactured and traded here by hand in a traditional way for 153 years. Even today, tubes and rods for the processing industries are produced in spectacular handicraft - and in an unusually high quality and exquisite variety of colours.



Visits to the small workshops in the city of Lauscha

Lauscha is also the "cradle of lamp-blown glass" and you can look over the shoulders of the glassblowers throughout the town as they make artistic creations. Workshops, glass shops and tourist oriented glassworks are open all year round, and in some of them visitors can even try out their own ornament-blowing skills or wind their own beads with the help of a bead designer.

From Friday noon onwards, the conference will continue in the community centre of the city of Sonneberg.

Lectures during the VDG conference (Thursday evening to Saturday noon)



Lecture: The influence of glass tubing on volume measuring devices

Speaker: Dr. Christian Schurz

Portrait:

Dr. Christian Schurz studied chemistry at the TU BA Freiberg and received his doctorate in chemistry from the University of Stuttgart in 2011. Since 2013 he has been working as a product manager for volume measuring devices and reusable plastic devices at BRAND GMBH + CO KG. In addition to application advice, part of his work is the activity in the national standardization committee for volumetric measuring devices. In this function, he is also involved in standardization work at an international level.

Prose Summary/Description:

Exact reading and setting of the meniscus of a volumetric measuring device requires the combination of glass properties and adjustment (precise setting of technical devices). Every type of volumetric measuring device has its justification and every type has a practical background. Otherwise the routine work in the laboratory would not be as good, as fast and as accurate as it is today. What unites volumetric flasks, volumetric pipettes, measuring cylinders/mixing cylinders, graduated pipettes, burettes and titrators is the glass tube. This lecture explains what the diameter, distances, stresses and material properties of the glass tube have to do with the analyses and their preparations in the laboratory.

Bullet point summary/description:

Distinction between preparation (volume flasks, volumetric pipettes, measuring cylinders/mixing cylinders, graduated pipettes) and analysis (burettes, titration apparatus)

Cylindrical shape (glass tube) important for measurement

- Spacing for good meniscus formation
- Reading quality
- Shake/homogenize

Reading Meniscus: Influences (Clean Surface, Parallax, Light, Color)

Volume: Influences from thermal stresses, cleanliness, waiting time, material contact, angles

Electronic analyzers vs. volumetric devices

- Routine and quick overview
- Accurate and little material impact
- Calibration by dilution series



Lecture: Training outline plan for glass apparatus builders

Speakers: BiBB employees, Peter Trautsch and Peter Bentivoglio



Roland Zain

Lecture 1: Glass history: "What does a tractor have to do with glass apparatus construction"

Lecture 2: "DIN in glass apparatus construction"

Roland Zain short portrait

Apprenticeship in Ilmenau as a glass apparatus builder with subsequent completed special training as a quartz glass blower. Years of work experience as a quartz glass blower in the semiconductor sector. After the German reunification, he reoriented himself and worked as a telecommunications electronics technician specializing in the laying of copper and fibre optic communication cables above and below ground. Returned to glass apparatus construction, first as a quartz glass blower, then to the Technical University of Clausthal, where I still work today. Master glass apparatus builder since 2006. He is currently a publicly appointed and sworn expert/appraiser in the glass blowing and glass apparatus builder trade (responsible for the EU). He is also active as chairman of the committee NA 055-01-03 AA "Glass devices and apparatus" of the DIN standards committee for laboratory devices and laboratory equipment of DIN e.V.

Lecture 1: Glass history: "What does a tractor have to do with glass apparatus construction"

A highly exciting story that goes back to the 19th century and has not yet been told to the end. Rich in tradition and future-oriented with innovations from glass apparatus construction with many patents and utility models worldwide. In research, the tractor oils are separated using glass columns..... Allow yourself to be surprised.....

Lecture 2: "DIN in glass apparatus construction"

Whether conical ground joints, laboratory flat flanges, Schott-Tech KF collar flanges, double-walled vessels or columns, all of these are part of DIN standards. "Criticism is the impetus for openness". A lack of transparency often leads to misjudgements and false facts. I hereby present the current structure and working methods as well as the procedure of a current DIN standard of glass apparatus construction and its special requirements.



Dr. Gerhard Greiner-Bär

Lecture: World Heritage Christmas Tree Decorations

Dr. Gerhard Greiner Bär, born in Lauscha in 1941, worked for many years as a research manager at TRISOLA, a company for glass fibres, after the German reunification he became an entrepreneur and founded the company Thüringer Filterglas Spechtsbrunn, wrote the first of a total of 3 publications on historical matters, which was published in the folk booklet "Lauscha's glass Christmas tree decorations".

intangible cultural heritage

On March 19, 2021, the long-awaited and happy news came from the Thuringian State Chancellery: The Conference of Ministers of Education of the federal states has included the "production of hand-blown glass Lauscha Christmas tree decorations" in the nationwide register of intangible cultural heritage. For the protagonists and initiators Dr. Gerhard Greiner-Bär, Lothar R. Richter and Jürgen Müller-Blech, who, after long research, were able to prove that Lauscha is the birthplace of the glass Christmas tree decoration, this was a reason for great joy. For a long time they pored over files, prepared documentation and finally submitted the application for admission last autumn.

The handmade glass Christmas tree decorations, blown in front of the lamp, have been manufactured in Lauscha for 190 years and soon found buyers all over the world.

This tradition is continued to this day in family-run workshops in Lauscha and the variety of products knows no bounds.

Unfortunately, the industry lacks the young talent that is so important. And so Lothar R. Richter hopes that the entry in the list of intangible cultural heritage will cause a boost for the glass vocational school, which is also located in Lauscha, so that this tradition can be preserved for many years to come and Lauscha can continue to refer to this unique selling point.



Henning Katte

Title: Objective measurement of residual stresses in glass

Henning Katte studied computer science and glass technology at the Technical University of Clausthal and is one of the founders and managing directors of the company ilis, headquartered in Erlangen. His company develops, produces and sells specialized software solutions and measuring systems for quality assurance in the glass and optics industry.

Contents:

The mechanical durability and processability of glass products is strongly influenced by residual stresses. Residual stresses are often still determined with simple, manually operated polariscopes and polarimeters, which can lead to inaccurate and subjective results. Modern imaging methods, on the other hand, enable automatic and fast measurement with high precision and spatial resolution. Digital measuring in real time enables the observation and control of production processes as well as a 100% control of production.

Workshops during the VDG conference (Friday noon to Saturday noon)

Topic: Production of original Thuringian Christmas tree decorations from thin-walled AR glass



Helmut Bartholmes

Production of original Thuringian Christmas tree decorations from thin-walled AR glass.



Master glassblower and owner of the glassblowing workshop "Thüringer Weihnacht" in Neuhaus am Rennweg/OT Limbach. The glass blowing workshop has been creating original Thuringian Christmas tree decorations for five generations and currently employs 10 people.

Helmut Bartholmes demonstrates how Christmas tree decorations are made from an AR tube with a wall thickness of 0.8 mm. These are not limited to baubles, but includes a wide variety of decorations.



Waldemar Ajrich
Working on a large plane-ground lid

Waldemar Ajrich has many years of experience as the responsible teacher for glass apparatus builders and process mechanics - glass technology at DWK LifeSciences. As a teacher at the Wertheim vocational school, he is responsible for practical lessons and is a member of the examination board of the IHK Heilbronn.

Waldemar Ajrich has been with Lenz Laborglas GmbH & Co. KG since 2020, with a focus on reactor construction and process optimization.



Leonie Adamczyk
Container (approx. 500 to 1000 ml) made of Boroflot discs

Leonie Adamczyk is 27 years old, born and raised in beautiful Saarland. After graduating from high school, she didn't want to end up at a desk. So she researched what great trades still exist and came across glass apparatus construction. She completed her training at Gauer Glas in Püttlingen. She now works in Stuttgart at the Max Planck Institute for Intelligent Systems, where she experiences a

spectrum of the glass blowing trade that was beyond her imagination.



Adrian Zühlke
Fusing electroglass with metal

Adrian Zühlke is 26 years old and has been working as a glassblower for 5 years.

His current employment includes work on a vacuum system, lead glass, and glass-to-metal bonding for the manufacture of CRT and REED systems.

Further workshops to be added.

A youth workshop will take place throughout the seminar.