INSTITUTE FOR PARTICLE TECHNOLOGY

The Institute of Particle Technology has set itself the goal of establishing excellent research in selected areas of mechanical process engineering and particle technology. Central areas of research are the specific mechanical stressing of particles and the functionalisation of particle surfaces.

This research forms the basis for specialised functional materials, in particular functional layers of particles and nanocomposite materials, high-performance battery electrodes and novel drug forms. In line with these focal areas, research activities at the Institute for Particle Technology concentrate on the working groups Powder and Slurry Processes, Pharma and Bioparticle Technology and Battery Process Engineering under the direction of Prof. Dr.-Ing. Arno Kwade, as well as the areas of Nanomaterials under the direction of Prof. Dr. Georg Garnweitner, Particle Simulation & Functional Structures under the direction of Prof. Dr.-Ing. Carsten Schilde and Energy Storage Materials & Fuel Cells under the direction of Prof. Dr.-Ing. Sabrina Zellmer.

Further in-depth issues relating to basic operations such as comminution under dry and wet conditions, classification, dispersion and coating, as well as topics such as simulation with DEM and coupled CFD-DEM, particle functionalisation and micromechanics are pursued through a comprehensive and collaborative approach across various specialist groups.

General Information

PARTICIPATION FEE

	Regular	Early Bird (until 15.07.2025)	via Semigator.de
Participation fee	1.950,- €	1.800,- €	2.215,- €
GVT-members	1.900,- €	1.800,- €	2.100,- €
University members	1.200,- €		

SERVICES

The participation fee includes all course materials, refreshments and lunch during the seminar as well as the two dinners. If a registration is cancelled by 31 August 2025, the participant fee will be refunded less a processing fee of 60 €. In the event of cancellation at a later date, a refund is no longer possible, but the nomination of another participant is possible at any time. Our participation fees are not liable to Value Added Tax (tax exemption in accordance with § 4.22 UstG), since GVT has nonprofit status.

REGISTRATION

To participate in the seminar (29 September to 1 October 2025), please register with GVT by **31 August 2025**. Online registration at **www.gvt.org/hochschulkurse** is possible. Please do not transfer the registration fee until you have received the final confirmation of participation and invoice from GVT. Early registration is recommended due to the limited number of participants.

Forschungs-Gesellschaft Verfahrens-Technik e.V. (GVT)
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29th Sep – 1st Oct 2025 | Braunschweig, Germany

Grinding and Dispersing with Stirred Media Mills

Seminar and Workshop

Scientific Administration:
Prof. Dr.-Ing. Arno Kwade
TU Braunschweig
Institut für Partikeltechnik

Organizer:
Forschungs-Gesellschaft Verfahrens-Technik e.V.

In cooperation with:
DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V.
Technische Universität Braunschweig
iPAT

SEMINAR AND WORKSHOP

The seminar covers the basics of grinding and dispersing in stirred media mills and presents models & methods for design and optimisation of these processes. In an integrated workshop, participants have the opportunity to apply the acquired knowledge independently under supervision to strengthen the in-depth understanding.

The agenda also includes a guided tour of the institute, during which the wet and dry grinding, dispersing and particle analysis equipment will be explained. Experiments will be demonstrated to illustrate the course content. This provides participants with additional opportunities for mutual exchange and discussion.

CONTENT

Operation and design of stirred media mills

Grinding and dispersing in stirred media mills is an important process step in many branches of industry. Although the first of these mills were developed in the 1950s already, knowledge of the physical fundamentals in the mill and experience in industrial applications has increased significantly in recent times.
The course provides an overview of the physical and process-related correlations in grinding and dispersing in stirred media mills. The necessary theoretical principles are explained in detail by means of equations and experimental data. In the further stages of the course, participants will discover how this knowledge can be used for the design and optimisation of comminution and dispersion processes. The various machine types and their areas of application are explained, along with the influence of key operating parameters on grinding and dispersing results. In addition, the operation modes of stirred media mills, the associated particle size analysis and possible methods for scale-up are presented.

TOPICS

Introduction:

- Mill types
- Particle size analysis

Fundamentals of grinding in stirred media mills:

- Physical fundamentals
- Models for process characterisation
- Process design and optimisation

Operation of stirred media mills:

- Influence of operating parameters
- Transport behaviour
- Operation mode
- Grinding media wear
- Maximum production capacity

Mill scale-up:

- Methods of scale-up
- Application examples

LECTURERS

- Prof. Dr.-Ing. A. Kwade
- Prof. Dr.-Ing. C. Schilde
- Dr.-Ing. I. Kampen
- other members of the Institute for Particle Technology

SCIENTIFIC DISCUSSION IN POSTER SESSION

As part of the course, we also offer a small colloquium in which all participants have the opportunity to present and discuss current research work or general questions and challenges relating to their research and development activities. This is planned as a poster session with short introductory presentations. The offer is voluntary and not connected with additional costs.

VENUE

Technische Universität Braunschweig
PVZ – Center of Pharmaceutical Engineering
Franz-Liszt-Str. 35a
38106 Braunschweig
Germany

DATA PRIVACY NOTICE

Personal data which is necessary to organize this course will be transferred to the IPAT at TU Braunschweig. You have the right to withdraw a given consent at any time. Details about our privacy policy can be found at www.gvt.org/Datenschutz.

INFORMATION

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ORGANISATION

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