



- Extrusion/ Spheronization
- Continuous Granulation by Roll Compaction/Dry Granulation
- Continuous Granulation by Twin-Screw Granulation
- Solid Lipid Extrusion
- Tableting
- Coating Processes
- Melt Extrusion



- Paediatric formulations
 - Minitablets
 - Orodispersible Tablets
 - Film formulations
 - Ion-exchange resonates
 - Devices for individual dosing
 - Pulmonary drugs and devices
- Orphan drugs
- Taste assessment and masking
- Process analytical technologies



- Biodegradable Macromers
- Bioactive Hydrogels
- Bioprinting

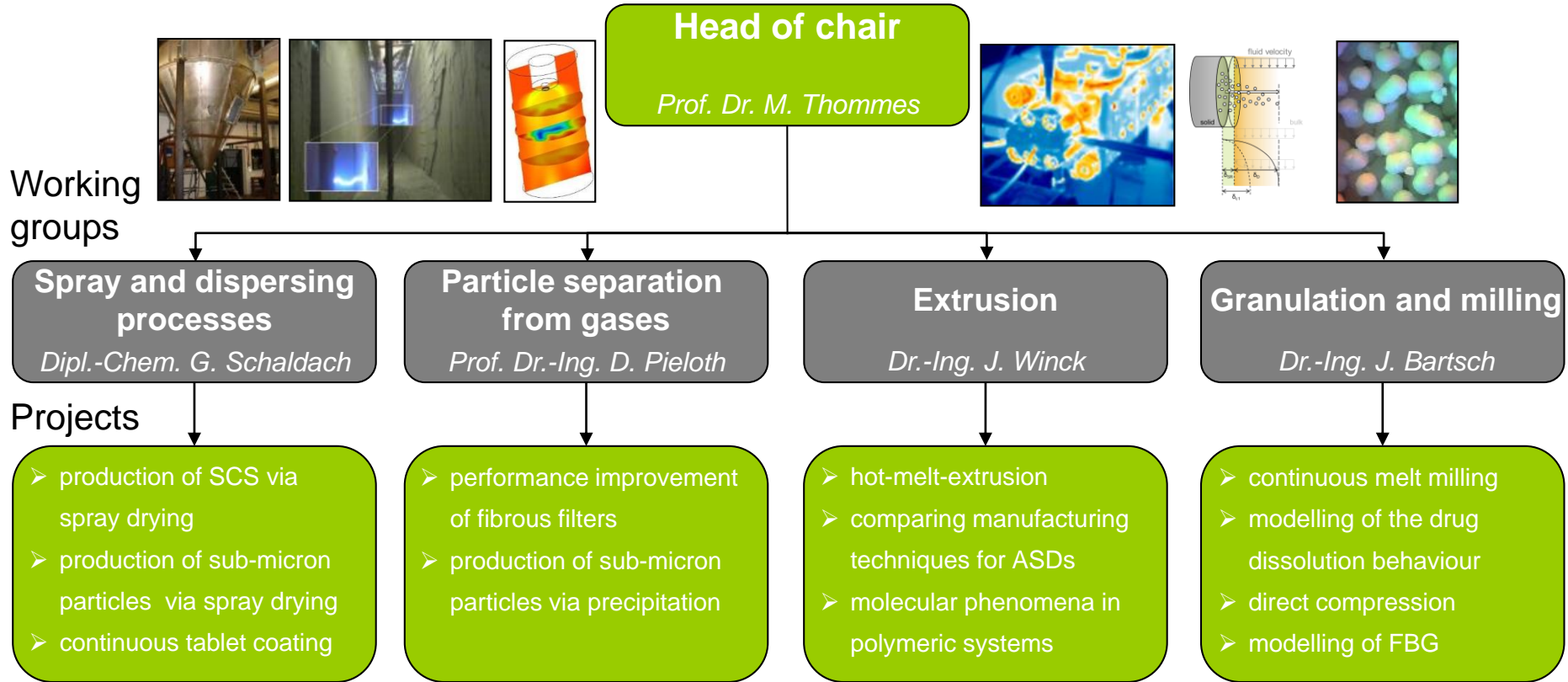


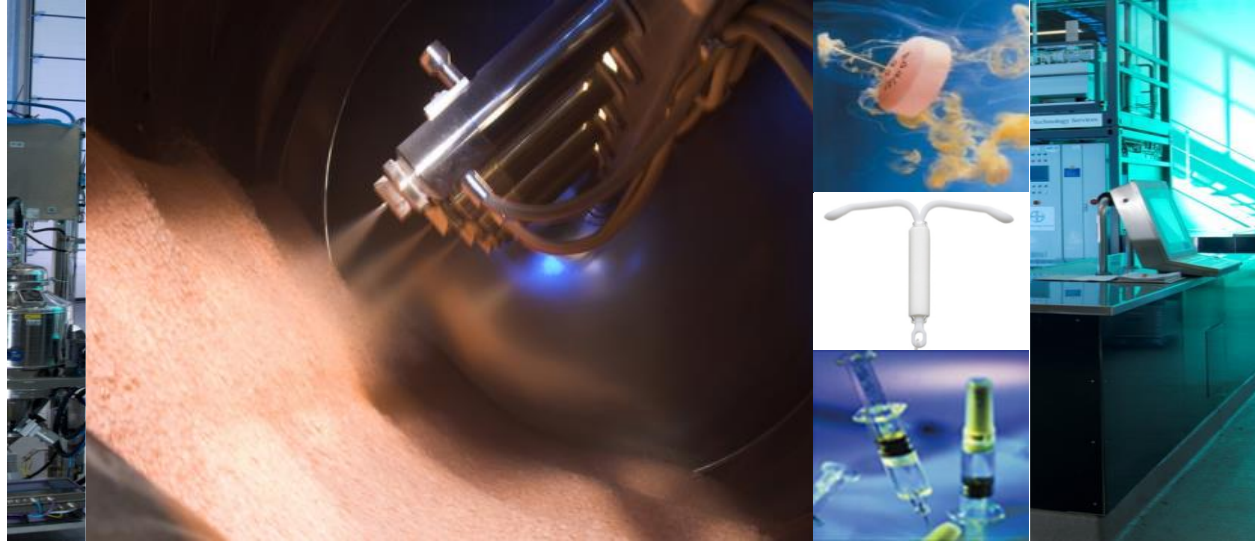
- **3D Printing in Pharmaceuticals**
- **FDM printing**
 - Filament extrusion for fused deposition modelling
 - Development of a one-step extrusion-printing technique
 - Drug printing for individual dosing
- **Rapid prototyping**
- **Powder printing**
- **Poorly soluble drugs**
 - Child appropriate formulations of poorly soluble drugs
 - Biopharmaceutical characterization of amorphous solid dispersion

Organizational structure

	TU Dortmund University	Faculty Bio- and Chemical Engineering
Founded in	1968	1969
Area	172.000 m ²	15.000 m ²
Students	~33.000	~1200
Staff	6.200	188
Professors	300	13
Faculties/ Laboratories	16	13 (5 in pharmaceuticals)







DDiC
Drug Delivery **innovation** Center

Started September 1, 2017

ddic.invite-research.com

demonstrating future production concepts

Academic Partners

HHU Düsseldorf: Prof. Dr. J. Breitkreutz
Prof. Dr. Dr. h.c. P. Kleinebudde
TU Dortmund: Prof. Dr. G. Schembecker
Prof. Dr. G. Sadowski
Prof. Dr. M. Thommes
EMAU Greifswald: Prof. Dr. W. Weitschies*
LMU München: Prof. Dr. G. Winter*
* external academic partners

Industry Partners

TIER-1:	Bayer	TIER-2:	Ashland	Haver & Boecker
	Merck		Inosim	L.B. Bohle
	UCB		Parsum	Amoform
			Siemens	Nisso Chemical Europe

12 Ph.D. students were employed since September 2017
Also a number of Postdocs were hired!

National Funding Opportunities – PhD students

- **DAAD (German Academic Exchange Service)**

- Full PhD programme in Germany
- Bi-nationally Supervised Doctoral Degrees
- One-Year and Short-Term Grants

- **DFG (German Research Foundation)**

- Walter-Benjamin-Programme

- You are in Germany and want to go abroad
 - Postdocs in early career phase
 - Applicants must have worked in Germany for the last three years

- **Humboldt-Foundation**

- Humboldt Research Fellowship

- You are in outside of Germany and want come to Germany
 - Postdocs in early career phase
 - Additional support in Germany: e.g. intensive language course

- **DAAD (German Academic Exchange Service)**

- Bilateral Exchange of Academics (short term visits: up to 3 months)

- **DFG (German Research Foundation)**

Walter-Benjamin-Programme

https://www.dfg.de/en/research_funding/programmes/individual/walter_benjamin/index.html

- **Humboldt-Foundation**

Humboldt Research Fellowship

(<https://www.humboldt-foundation.de/en/apply/sponsorship-programmes/humboldt-research-fellowship>)

- **DAAD (German Academic Exchange Service)**

Full PhD programme in Germany

(<http://www.research-in-germany.org/en/research-funding/funding-programmes/daad-research-grants-doctoral-programmes-in-germany.html>)

Bi-nationally Supervised Doctoral Degrees

(<http://www.research-in-germany.org/en/research-funding/funding-programmes/daad-research-grants-bi-nationally-supervised-doctoral-degrees.html>)

One-Year and Short-Term Grants

(<http://www.research-in-germany.org/en/research-funding/funding-programmes/daad-research-grants---one-year-and-short-term-grants.html>)

Great:

Visit <http://www.research-in-germany.org/en> for an excellent overview of all programmes!

Also great:

Marie Skłodowska-Curie European Postdoctoral Fellowships (EU funded)