



# Chinese-German Summer School

## Modeling and Simulation in Additive Manufacturing: from Design Stage to Component Reliability

August 21 – August 29, 2023  
RWTH Aachen University, SuperC

Organizers:

Univ.-Prof. Dr.-Ing.  
Christoph Broeckmann



Prof. Dr. Lele Zhang



Funder:



### Preamble

RWTH Aachen University and Beijing Jiaotong University are pleased to announce and invite you to join the 5th Chinese-German Summer School (CGSS) 2023 this summer. The 10-day program aims at enabling young researchers to consolidate their basic theoretical knowledge and improving their research capabilities in the area of safety assessment and design of materials and structures.



### Content

#### • Lecture

6 Lectures will be given by internationally recognised scientists on the following topics:

- \* Finite element simulation in material science and engineering
- \* Crashworthiness design of structures
- \* Effective properties of metallic and polymeric microstructures
- \* Additive manufacturing in lightweight optimization
- \* Prediction of Asymptotic States and Estimation of Safety margins
- \* Multi-scale shakedown analysis and its applications

#### • Seminar

Every participant will present his or her scientific work, communicate and exchange knowledges with others in the student seminars.

#### • Visit to the laboratory and company

The combination of the scientific study and practical experience will be enhanced through additional laboratory visits and an one-day excursion.

### Important dates

Registration:	until August 10, 2023
Arrival:	August 20, 2023
Begin:	August 21, 2023
End:	August 29, 2023
Departure:	August 29, 2023

### Fees

The participation in the CGSS23 is free of charge. All program fees, allowance as well as travelling and accommodation costs will be fully covered by the Sino-German Center for Research Promotion.

### Application

Applicants must be students or research assistants from a German university or research institution, and provide the title and a short abstract of the presentation that will be reported in the seminar. The topic of the presentation should be related to the theme of the summer school. Each presentation lasts 20 minutes plus 10 minutes for the discussion.

Please send your application via e-mail to  
[event@iwmm.rwth-aachen.de](mailto:event@iwmm.rwth-aachen.de)  
before

*August 10, 2023.*

### Contact

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in Mechanical Engineering  
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## Programme of Chinese-German Summer School, 2023

	21.08.2023 Monday	22.08.2023 Tuesday	23.08.2023 Wednesday	24.08.2023 Thursday	25.08.2023 Friday	28.08.2023 Monday	29.08.2023 Tuesday	
	IWM WK Lecture Hall		SuperC Ford Hall		<b>Full-day excursion: CERATIZIT Hard Material Solutions S.à r.l., Mamer, Luxembourg</b>	SuperC Ford Hall		
09:00 – 10:30	Opening ceremony	Crashworthiness design of structures composed of shape memory alloy Prof. L. Zhang	Seminar 3	Effective properties of metallic and polymeric microstructures Dr. G. Laschet		Prediction of Asymptotic States and Estimation of Safety Margins Prof. K. Spiliopoulos	Multi-scale shakedown analysis and its applications in designing AM structures Prof. G. Chen	
10:30 – 11:00	Coffee break					Coffee break		
11:00 – 12:00	Guided tour of RWTH Aachen	Seminar 1	Seminar 4	Seminar 5		Seminar 7	Seminar 9	
12:00 – 13:30	Lunch break					Lunch break		
13:30 – 15:00	Finite element simulation in material science and engineering Prof. C. Broeckmann	Seminar 2	Additive Manufacturing in Lightweight Optimization Prof. K.-U. Schröder	Seminar 6		Seminar 8	Closing ceremony	
15:00 – 15:30	Coffee break					Coffee break		
15:30 – 17:00	Guided tour of the Aachen City	lab visit Fraunhofer Institute for Laser Technology, Aachen	lab visit Institute for Power Electronics and Electrical Drives, RWTH Aachen	lab visit RWTH Center for Wind Power Drives, Aachen		lab visit Institute for Materials Applications in Mechanical Engineering, RWTH Aachen		
17:00 – 20:00	Free time					Dinner		

### Seminar Venue:

RWTH University, SuperC, Templergraben 57, Ford Hall ( 6th floor) and Institute for Materials Applications in Mechanical Engineering (IWM), Augustinerbach 4, WK Lecture Hall (first floor).

### Accommodation:

Hotel rooms will be booked for away participants of the summer school from August 20 to August 29 (9 nights). Participants will be guided from the hotel to the seminar venue on the first day, August 21 Monday.

