



Gemeinsam studieren, gemeinsam forschen  
An Progress of the Joint Master Program  
RWTH-Aachen----Tsinghua-Beijing

Tsinghua University  
Beijing, P.R. China



- History of the program
- Organization of the program
- Progress of the program
- Benefits and lessons

## 1. The Milestone of the Program(1)

- **Before 1999:** VDI, Tsinghua and RWTH had been discussing a joint education program to train qualified engineers in automobile related areas for German companies and joint ventures in China and meanwhile increase the mutual understanding between two education systems .
- **July and October 1999:** Meeting of the two Ministries of Education, Ms. Edelgard BUHLMANN of Germany and Ms. CHEN Zhili of China.
  - Signing of an agreement to intensify the cooperation between the two countries by creating joint Master Programs for high-qualified bachelors. Students will be studying at the universities of both countries.
  - **Tsinghua and RWTH are chosen for the model project.**

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## 1. The Milestone of the Program (2)

- **Jan.,2001,** working groups of RWTH and Tsinghua formed and started to work.
  - Two Field: Production Engineering and Automotive Engineering
  - Program mode: first semester will be finished in Tsinghua, then the following two semesters will finished in Aachen and the last two semester will be finished in Tsinghua again.
  - 24 courses was decided for two disciplines(automotive engineering and production engineering). all the courses will be given in English, and Aachen professor will prepare the lecture notes for all lecture.



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## 1. The Milestone of the Program (3)

- **June, 2001**, The first group of students from Tsinghua start their study in the program
- **Sep., 2002**, Tsinghua receive the first group of students from Aachen,
- **July, 2004**, The first group of Tsinghua students will obtain the degree from Aachen and Tsinghua.
- **2006**, The first Aachen students will obtained his Master degree from Tsinghua



## 1. The Milestone of the Program (4)

- **June, 2001**, The first group of Professors Supported by this program from Tsinghua visited Aachen
- **May, 2002**, from teaching to research, a joint seminar on Welding technology called 'Joint Together' was held in Beijing
- **June, 2003**, Professor Dilthey and Klocke came to Tsinghua and gave lectures to the students who will go to Aachen later.



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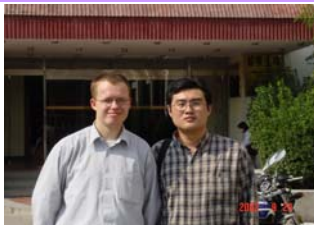
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Meeting with Adam Shall ASG



Aachen Students in Tsinghua



Visiting Coal Mine in the Augustiner -By VDI



Visiting the industrial museum



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## 2. Organization of the program (1)

- The fields for Joint master program : Tsinghua and RWTH jointly educate graduate students in the field of :
  - Production Engineering (20 students)
  - Automotive Engineering (10 students)
- Curriculum ([Curriculum.ppt](#)) and Language:
  - Learn all the required courses from the subscribed list
  - English for Technical Curriculum
  - Free German/chinese Language Curriculum
- The maximum 30 Chinese students from Tsinghua will go to RWTH for their joint master course study and mini-thesis work for one year. Meanwhile the maximum 30 Germany students from Aachen can study at Tsinghua in the same program

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## Curriculum for production engineering

	Credits	Prüfer	1 <sup>st</sup> semester	2 <sup>nd</sup> semester	3 <sup>rd</sup> semester	4 <sup>th</sup> semester
			(ws)	(ss)	(ws)	(ss)
			V Ü	V Ü	V Ü	V Ü
			Tsinghua	Aachen	Aachen	Tsinghua
<b>Pflicht- und Wahlpflichtfächer</b>						
Industrial Engineering, Ergonomics and Work Organisation	7	Luozak	2 2			
Machine Tools I	7	Weck	2 2			
Manufacturing Technology I	7	Klocke	2 2			
Production Management	7	Eversheim	2 2			
Quality Management	7	Pfeifer	2 2			
*Logistics	7	Stich		2 2		
Machine Tools II	7	Weck		2 2		
Manufacturing Technology II	7	Klocke		2 2		
*Production Metrology	7	Pfeifer		2 2		
Systematic Engineering Design II	7	Feldhusen		2 2		
Welding Technology I	7	Dillthey		2 2		
Advanced Software Engineering	7	Henning			2 2	
*Virtual Machine Tool	7	Weck			2 2	
Systematic Engineering Design I	7	Feldhusen			2 2	
System Simulation	7	Welchert			2 2	
*Welding Technology II	7	Dillthey			2 2	
Summe der SWS:			20	16 (24)	12 (20)	
German Language Course	21		2 2	2 2	2 2	
Mini-Thesis	10					
Final-Thesis (9 months, with second tutor from RWTH Aachen)	30					

Summe der Credits

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## Curriculum for Automotive engineering

	Credits	Prüfer	1 <sup>st</sup> semester	2 <sup>nd</sup> semester	3 <sup>rd</sup> semester	4 <sup>th</sup> semester
			(ws)	(ss)	(ws)	(ss)
			V U	V U	V U	V U
			Tsinghua	Aachen	Aachen	Tsinghua
<b>Pflicht- und Wahlpflichtfächer</b>						
Automotive Engineering I	7	Wallentowitz	2 2			
Fundamentals of Light Weight Design	7	Reimerdes	2 2			
Industrial Engineering, Ergonomics and Work Organisation	7	Luczak	2 2			
Manufacturing Technology I	7	Klocke	2 2			
Production Management	7	Eversheim	2 2			
Automotive Engineering II	7	Wallentowitz		2 2		
Internal Combustion Engines I	7	Pischinger		2 2		
Manufacturing Technology II	7	Klocke		2 2		
*Mechatronic Systems	7	Wallentowitz		2 2		
*Production Metrology	7	Pfeffer		2 2		
*Vehicle NHV (Noise/Vibrations/Harshness)	7	Biermann		2 2		
Welding Technology I	7	Dillthey		2 2		
Automotive Engineering III (Vehicle Body Design)	7	Wallentowitz			2 2	
Internal Combustion Engines I	7	Pischinger			2 2	
Quality Management	7	Pfeffer			2 2	
*Welding Technology II	7	Dillthey			2 2	
Summe der SWS			20	16 (28)	12 (16)	
German Language Course	21		2 2	2 2	2 2	
Mini-Thesis	10					
Final-Thesis (9 months, with second tutor from RWTH Aachen)	30					

Summe der Credits

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## 2. Organization of the program (2)

- Procedures for qualifying: ranking students, by the average scores, and SRT(Students Research Trainings) performance, a exam for English proficiency and face to face interview. the candidates are from all the engineering departments of the university.
- schedule of the program (totally 5 semesters)
  - For Tsinghua students
    - Tsinghua/Aachen/Aachen/Tsinghua/Tsinghua
    - In Aachen: Curricula+mini-thesis: All are English lectures.
    - In Tsinghua:Curricula+degree-thesis
  - For Aachen student
    - Aachen/Tsinghua/Tsinghua/Aachen
    - In Tsinghua: Curricula+mini-thesis: All are English lectures.
    - In Aachen: Curricula+degree-thesis

## 2. Organization of the program (3)

### ➤ Score

- During the joint master program period, the score will be accepted by the two universities, no matter the curricula are taught in Aachen or in Tsinghua University provided the courses are on the curriculum list and are given with the same teaching materials.

### ➤ Degree

- the two universities will issue their degrees for this joint program respectively when the students meet all the requirements subscribed in the curriculum.

## 3. The Progress of the Program (1)

### ➤ Communication and cooperation was enhanced by this joint program

- About 145 Tsinghua students have been enrolled in this program within 5 years. Among them more than 50 students has obtained the double degrees.
- About 45 Aachen students have been enrolled in this program within 4 years and the number of students are growing year by year.
- 20 Tsinghua professors and 7 Aachen professors visited the opposite campus in the past four years.
- Several joint research projects has been funded by both sides.



## 2. The Progress of the Program (2)

- The students benefit from this program,
  - They study and work together, and understand both culture, be used to work in an international environment;
  - It is welcomed by big company.
    - Siemens , Daimler Chrysler, Schneider electric. , ZF, Intel, IBM, Delphi

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## The First Group

蔡秀文	萨克斯汽车零部件系统(上海)有限公司	研发	中德合资	上海
陈德林	科德宝(中国)	生产管理	德国独资	未定
陈俊杰	科德宝(中国)	销售	德国独资	上海
李黎	施耐德电气(中国)	管理	法国独资	上海
李琦	英特尔(中国)	生产管理	美国独资	上海
李仁芳	施耐德电气(中国)	管理	法国独资	上海
刘晓亮	新蛋(中国)	研发/咨询	美国独资	上海
吕新福	萨克斯汽车零部件系统(上海)有限公司	生产管理	中德合资	上海
罗明	施耐德电气(中国)	IE咨询	法国独资	上海
任艳敏	施耐德电气(中国)	市场营销	法国独资	北京
王飞	施耐德电气(中国)	生产管理	法国独资	北京
王煜	施耐德电气(中国)	生产管理	法国独资	天津
韦华	上海天合汽车安全系统有限公司	销售	美国独资	上海
余旭秦	施耐德电气(中国)	生产管理	法国独资	上海
郑勇	ABB(中国)	生产管理		未定
周宇	IBM(中国)	销售/咨询	美国独资	北京
朱家饶	科德宝(中国)	生产管理	德国独资	未定
裘民民	谈博	-	-	-
赵正宣	谈博	-	-	-
<b>汽车工程系</b>				
陈文敏	未定	-	-	-
秦伟	戴姆勒-克莱斯勒(中国)		中德合资	北京
傅正阳	未定	-	-	-
蒋恒飞	FIR(中国)	研发	德国独资	大连
刘金玲	泛亚汽车技术中心	研发	中美合资	上海
任增义	萨克斯汽车零部件系统(上海)有限公司	销售	中德合资	上海
孙伟	西门子(中国)	研发	德国独资	上海
项里程	AVL(中国)	研发	奥地利独资	北京



## The Second Group

Name	Employment Information
LIU Yun	Delphi (China) Investment Company Ltd.
GONG Qingjie	Delphi (China) Investment Company Ltd.
LIANG Rui	National Instrument Company Ltd.
ZHOU Hanlu	ZF (China) Investment Company Ltd.
张展生	Productivity Center of Guangdong Province
周海涛	ZF Invest
黄海庆	马凯投资咨询(上海)有限公司
安周	北京正丰易科环保技术研究中心有限公司
杨帆	Mckinsey Consulting Corp.
申悦	Oracle
吴兆卿	Trends Technology
孙林,赵善,胡海滔,贺新锋,梁娜	Schneider electric.
樊凡	航卫通用电气医疗系统有限公司
宋扬	INTEL
曹晖	中国船舶工业综合技术经济研究院



## 2. The Progress of the Program (3)

- Both universities have launched more English program for the international students;
- The program has been renewed by both governments for the next four years, six universities from both side will joint in the joint master program by use of this successful model.



## International Master Program: Global Manufacturing

- Curriculum
  - Decision Making
  - Ergonomics and Work Organization
  - Simulation
  - Production Management (I) (II)
  - Quality Engineering
  - Logistics and Supply Chain Management
  - Manufacturing Technology (I) (II)
  - Systematical Engineering Design
  - Enterprise Integration and MIS
- These



## Benefit and Lesson

- Benefit
  - Professor: teaching and research communication enhancement/joint research;
  - Student: good job, enhancement of capability on international communication, understand the culture and the different educational philosophy;
  - University: International program, double degree;

## Benefit and Lesson

### ➤ Lesson

- Different focus : combining the interests from different parties;
- Continuous Improvement of program: clearly define the goal of the program : why we need this program, what can we help our student in what way.
  - What does the industry think?
  - What does the student think?
  - What does the professor think?
- Leverage advantages from both education system
- Research cooperation is led by both professors

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