

# Integrated Models of Teaching, Research and Technology Transfer

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Graz University of Technology

## TU Graz: Facts and Figures (2006)

Founded in 1811  
Autonomy in 2004

7 faculties  
104 institutes  
1900 employees (1200 academic, 700 non-academic)  
9200 students (14% foreigners from 72 countries, 20% female)  
36 Bachelor / Master programs, PhD programs  
Degrees awarded: 750 B/M, 150 PhD

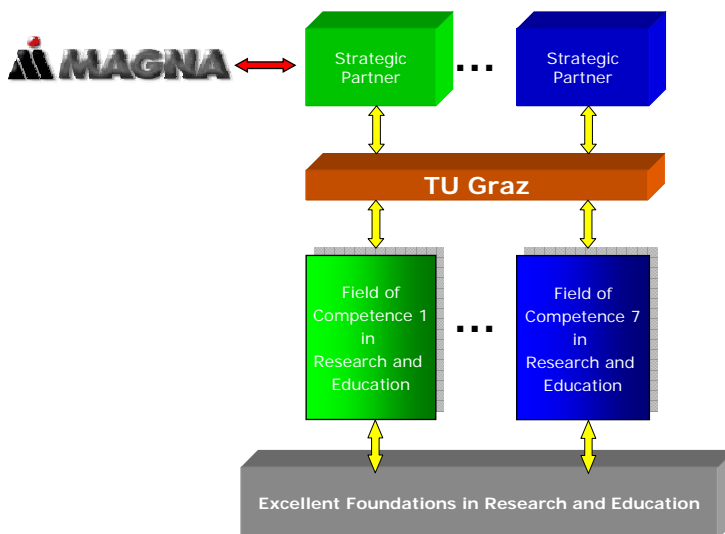
University board (supervisory, advisory)  
Research advisory board

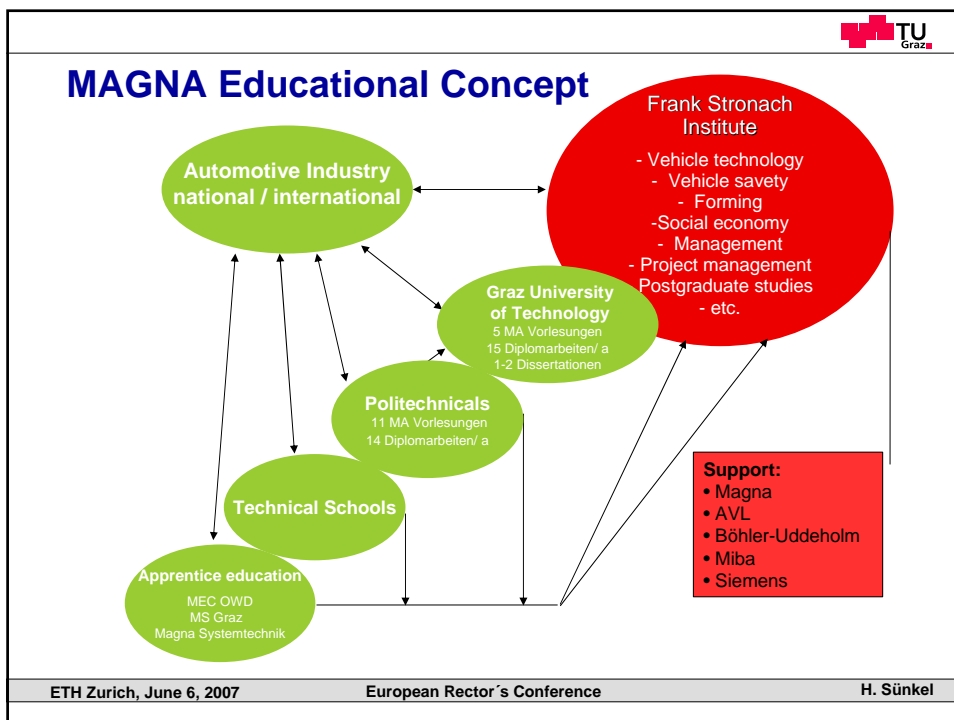
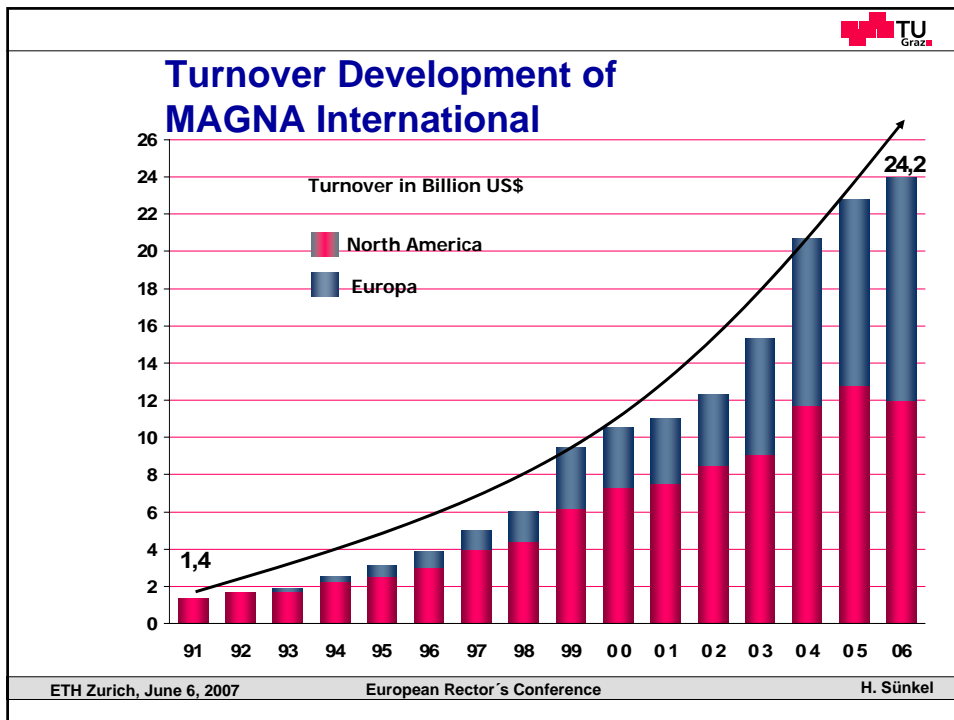
Total budget: 140 Mill €  
Federal: 92 Mill € (flat 2004 – 2006)  
Project: 38 Mill € (doubled in 4 years)  
Study fees: 6 Mill €  
Other: 4 Mill €

## Profile building: 7 Fields of Competence

- 1 Human- and Biotechnology
- 2 Transportation Science
- 3 Advanced Materials Science
- 4 Sustainable Systems
- 5 ICT and Scientific Computing
- 6 Design and Construction Science
- 7 Production Science and Management

## Fields of Competence and Strategic Partners





## Ideas for the Frank Stronach Institute (FSI)

- To secure the long-term demand for top university graduates in automotive engineering in general
- To secure the long-term access of MAGNA to top-level university graduates in automotive engineering with management capabilities
- Strong link between education and research with emphasis on application
- Long-term partnership between MAGNA and Graz University of Technology

## Cooperation between MAGNA and TU Graz



- Contract signed in 2003
- Total amount of contributions for FSI:  
24 Mio. € in 10 years

Foundation of the „Frank Stronach Institute“ and establishment of the Study Program „Production Science and Management“





## Frank Stronach Institute

Full integration into Graz University of Technology

3 University Chairs

- Tools and Forming
- Vehicle Technology
- Vehicle Safety

New Building on Campus

- 3000 m2 workspace
- Top-level equipment



Study Program „Production Science and Management“

- Start in spring 2005
- Particular emphasis on international profile
- English as teaching language
- Education for leaders in the automotive industry

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## The Frank Stronach Institute: win-win for MAGNA and TU Graz

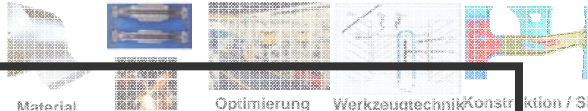
- Hi-tech investment by MAGNA: **4 Mio €**
- Hi-tech co-investment by the Ministry of Science and Research and the State of Styria: **2,4 Mio €**
- 10 years commitment of MAGNA to place research and education contracts to the Frank Stronach Institute of **2 Mio € p.a.**
- Commitment of TU Graz to develop competence in automotive technology at highest international level
- Study program “Production Science and Management” tailored to specific profile of leader’s positions in industry



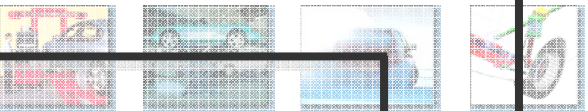
Graz University of Technology



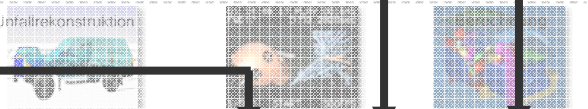
Chair for Tools and Forming



Chair for Vehicle Technology

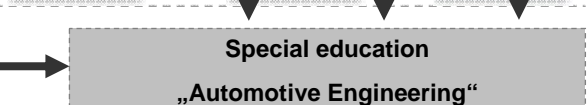


Chair for Vehicle Safety



Study Program

„Production Science and Management“



## Education Capacity at FSI



- Grants for high potentials
- Continuous support of up to 12 diploma theses and 20 PhD theses
- Topics with close relation to application
- Integration into ongoing research projects

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## Staff per Chair

### Basic staff:

- ◆ 1 Full Professor
- ◆ ½ Secretary
- ◆ 2 Post-graduates
- ◆ 1 Technician

### Project-funded staff:

- ◆ Scientists
- ◆ Teaching assistants
- ◆ Lecturers from other universities and industry
- ◆ Other industry staff

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## International Cooperation




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## Competence Centers

### Goals

Science  Economy  
 Research competence and economic competence  
 Developing of regional strengthes  
 Creation of critical mass  
 Academic sector: Focus and cooperation  
 Private enterprises: R&D - impulse and cooperation  
 Strategic orientation  
 Attractivness for R&D sites

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## Competence Centers

### Characteristics

Cooperation of researchers with > 4 enterprises  
Joint research programs  
Creation of research competence and excellence  
Quality assurance (peer review, evaluation)  
Duration: 7 yr (4 + 3)  
Yearly budget: approx. 3.5 M€  
Financing: public 60%, private 40%  
Staff: approx. 40  
Initiative: BMVIT

## Competence Centers

### Current program lines: K-Plus, K-Ind, K-Net

Total number: **40**  
17 K-Plus  
12 K-Ind  
11 K-Net  
> 1500 Researchers  
Cooperation with > 450 companies  
Volume 2005: 110 M€

Participation of TU Graz: **17**  
8 K-Plus  
3 K-Ind  
6 K-Net  
550 Scientists  
Financial envelope: 193 M€

## Competence Centers: Participation of TU Graz

Applied Biocatalysis	K-plus	Graz
Knowledge Management	K-plus	Graz
Virtual Vehicle	K-plus	Graz
Austrian Bioenergy	K-plus	Graz
Materials Center	K-plus	Leoben
Polymer Engineering	K-plus	Leoben
Virtual Reality and Visualization	K-plus	Wien
Applied Electrochemistry	K-plus	Wr. Neustadt
Acoustics	K-ind	Graz
Large Stationary Engines	K-ind	Graz
Timber Technology	K-ind	Graz
Combustion Engines	K-net	Graz
Water	K-net	Graz
JOIN	K-net	Graz
Metallurgy	K-net	Leoben
Advanced Computer Vision	K-net	Wien
Telecommunication	K-net	Wien

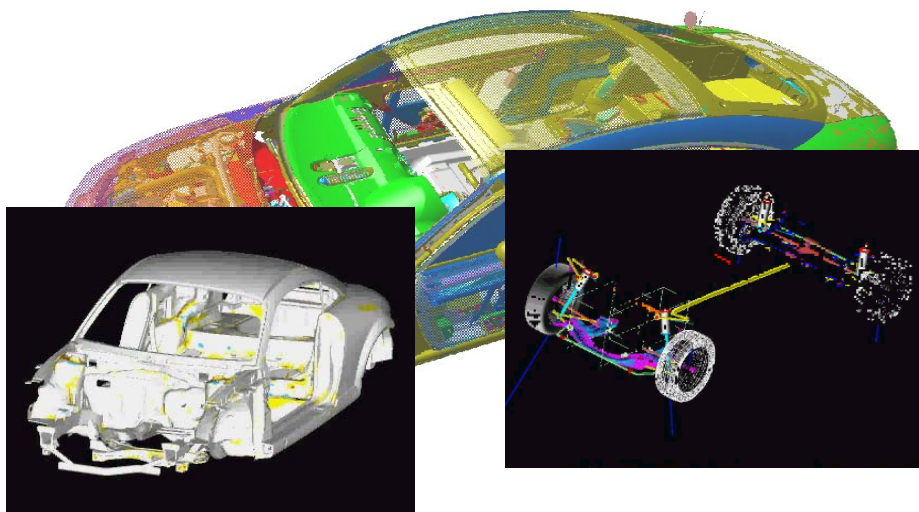
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## Virtual Vehicle

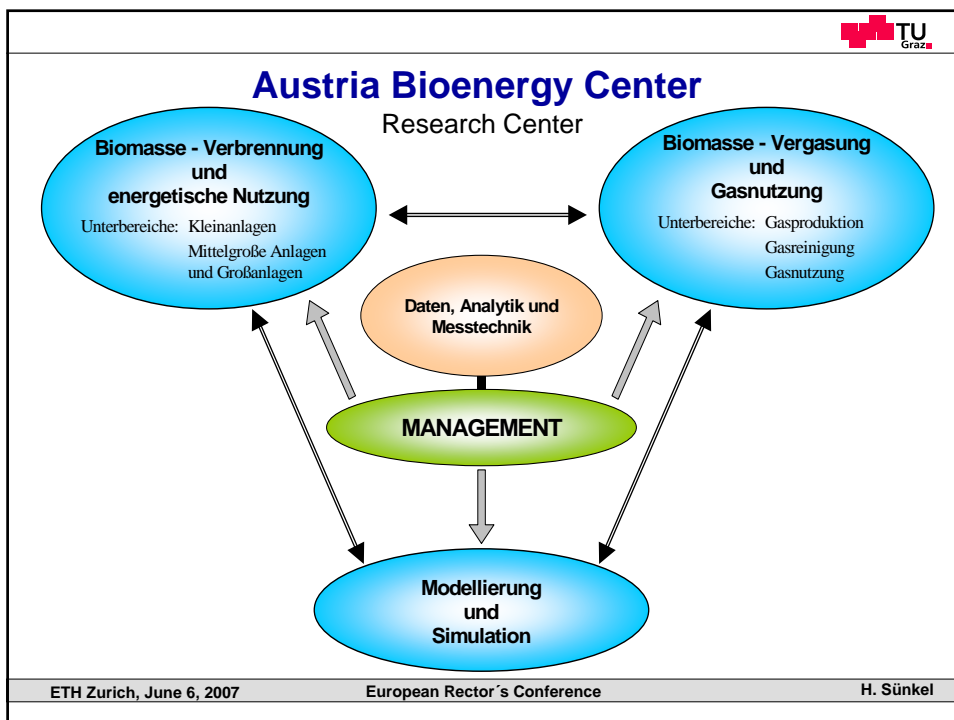
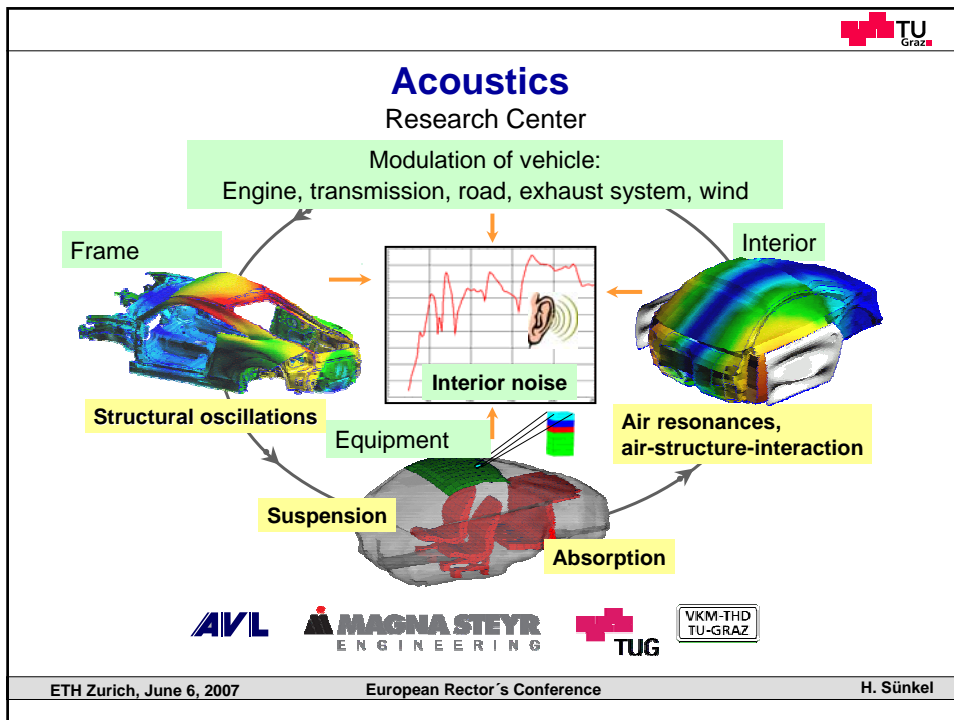
Research Center

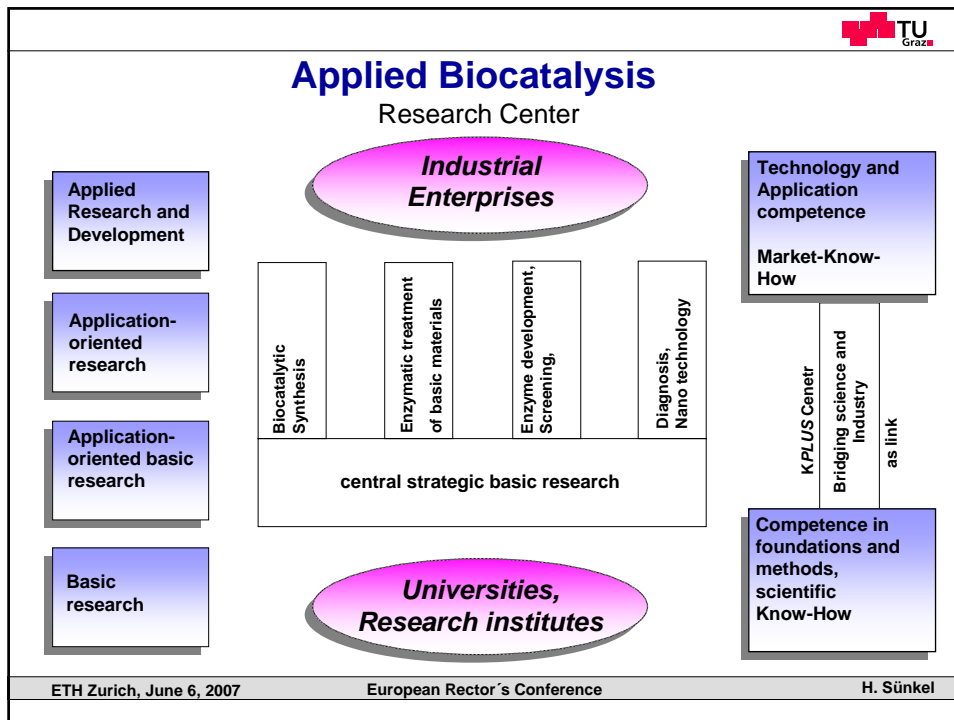



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## COMET: Competence Centers / new program line

- Strengthen cooperation between science and industry
- Support of high risk innovation
- Strengthen the position in international competition
- Centers with strong international visibility
- Segment of coming excellence strategy
- Link key players
  
- Public – private financing
- Start: 2007

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## COMET: Competence Centers / new program line

### **K-Projects:**

Max. number: 15-30  
Public support: 40 – 50%  
Duration: 3 years

### **K1-Centers:**

Max. number: 10-15  
Public support: 40 - 55%  
Duration: 7 years

### **K2-Centers:**

Max. number: 2-5  
Public support: 45 - 60%  
Duration: 10 years

## COMET: Competence Centers / expectations

- Link university and industry
- Link research and teaching
- Increase attraction of region for researchers, graduates and top-level students
- Important labor market for scientists
- Important for decision making of international enterprises
- Improve the academic / research profile of a location
- **TU Graz:**
  - K1-Center „Pharmaceutical Engineering“
  - K2-Center „Mobility for a sustainable environment“

## Cooperation

Graz University of Technology is embedded into national and international research networks and enjoys partnership with industry

