

## Welcome


### Proposal Writing for H2020 29.11.2013

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## Research

### Five Research Focal Areas:

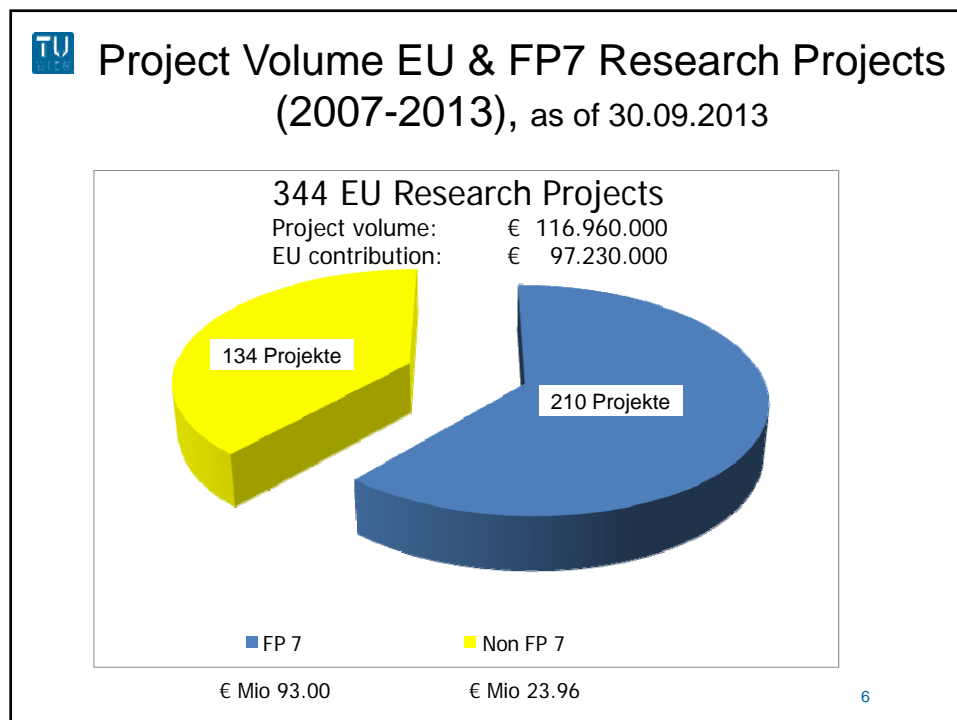
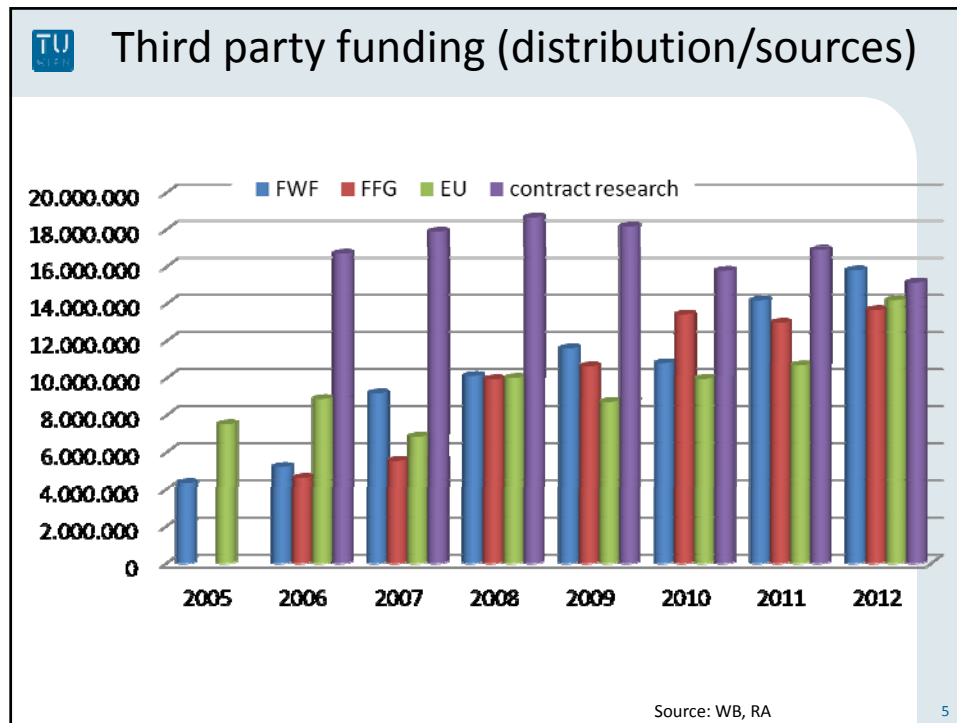
- Computational Science and Engineering
- Quantum Physics and Quantum Technologies
- Materials and Matter
- Information and Communication Technology
- Energy and Environment  
Research Centre **E+E**: [energiewelten.tuwien.ac.at](http://energiewelten.tuwien.ac.at)

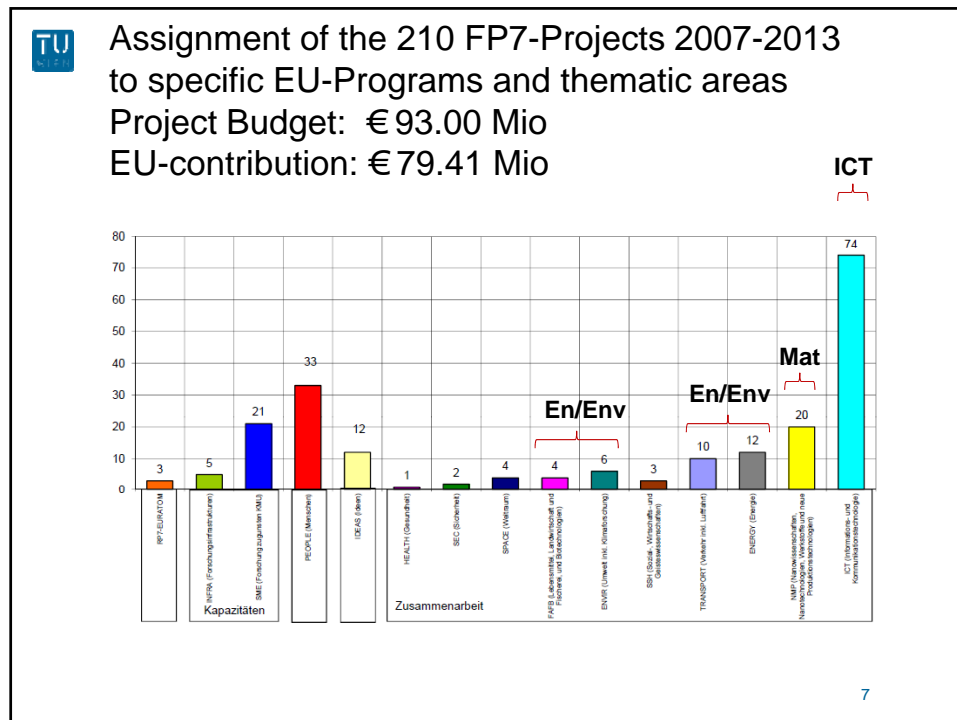
 TU-Research Matrix: Research Focal Areas and Research Fields					
Computational Science and Engineering	Quantum Physics and Quantum Technologies	Materials and Matter	Information and Communication Technology	Energy and Environment	Additional Fields of Research
Computational Materials Science	Photonics	Surfaces and Interfaces	Computational Intelligence	Energy Active Settlements and Infrastructures	Development and advancement of the architectural arts
Computational Fluid Dynamics	Quantum Metrology	Materials Characterization	Computer Engineering	Sustainable and Low Emission Mobility	The European City – between self-organisation und controllability
Computational System Design	Quantum Modeling and Simulation	Bulk Metallic Phases	Cognitive and Adaptive Automation and Robotics	Climate Neutral Renewable and Conventional Energy Supply Systems	Fundamental Mathematics Research
Mathematical and Algorithmic Foundations	Nano-electronics	Non-metallic Materials	Distributed and Parallel Systems	Environmental Monitoring	Mathematical Methods in Economics
Computer Science Foundations	Design and Engineering of Quantum Systems	Composites	Media Informatics and Visual Computing	Efficient Utilisation of Resources	
Modeling and Simulation	Quantum Many-body Systems	Biomaterials	Business Informatics	Sustainable Technologies and Products	
Risk Based Design		Special and Engineering Materials	Telecommunication		
		Structure-Property-Relationship	Sensor Systems		

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 Facts & Figures	
Finances	
ca. 215 Mio. €	global budget
ca. 72 Mio. €	third party funds
Staff	
3.367	scientific staff (nearly 50% third-party funded)
thereof 140	professors
1.174	non-scientific (administrative & technical) staff
4.541	total staff
Students	
ca. 27.000	
thereof 24,6%	foreigners
thereof 25,5%	women
Graduations	
ca. 2.200	first and second degrees, Bologna System
thereof	900 BSc, 460 MSc, 520 Diploma Engineer, 260 PhD

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**TU** Research Highlights: 14 ERC Grants ....

Andrius Baltuska, **Cycle-Sculpted Strong Field Optics** (MM)

Günter Blöschl, **Deciphering River Flood Change** (EE)

Silke Bühler-Paschen, **Quantum Criticality, The Puzzle of Multiple Energy Scales (Quantum Puzzle)** (QPT)

Ulrike Diebold, **Oxide Surfaces, Microscopic Processes and Phenomena at Oxide Surfaces and Interfaces** (MM)

Georg Gottlob, **Domain-centric Intelligent Automated Data Extraction Methodology** (ICT)

Christian Hellmich, **MICROBONE, Multiscale poro-micromechanics of bone materials, with links to biology and medicine** (CSE)

Thorsten Schumm, **Nuclear Atomic Clock** (QPT)

Siegfried Selberherr, **Modeling Silicon Spintronics** (MM)

Stefan Szeider, **The Parameterized Complexity of Reasoning Problems** (ICT)

**new in 2012:** Franz Schuster, **Isoperimetric Inequalities and Integral Geometry** (CSE)

**new in 2012:** Karsten Held, **Ab initio Dynamical Vertex Approximation** (CSE)

**new in 2013:** Jörg Schmiedmayer, **QuantumRelax: Non Equilibrium Dynamics and Relaxation in Many Body Quantum** (QPT)

**new in 2013:** Aleksandr Ovsianikov, **Laser-engineered Biomimetic Matrices with Embedded Cells** (MM)

**new in 2013:** Arno Rauschenbeutel, **NanoQuaNt – Nanofiber Quantum Networks** (QPT)

.... within the 5 TU Research Focus Points

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## EU Research Ranking

### EU-FP7-Ranking in CESAER-Network: **RP-7 Projects**

(Conference of European Schools for Advanced Engineering Education and Research: 60 Partners, TU Vienna only Austrian university)  
[www.cesaer.org](http://www.cesaer.org)



Rank	Country		Institution	FP7 Total
1	CH	Switzerland	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZURICH	406
2	BE	Belgium	KATHOLIEKE UNIVERSITEIT LEUVEN	394
3	CH	Switzerland	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	384
4	DK	Denmark	DANMARKS TEKNISKE UNIVERSITET	279
5	NL	Netherlands	TECHNISCHE UNIVERSITEIT DELFT	254
6	DE	Germany	KARLSRUHER INSTITUT FUER TECHNOLOGIE	249
7	SE	Sweden	LUNDS UNIVERSITET	240
8	SE	Sweden	KUNGLIGA TEKNISKA HOEGSKOLAN (KTH)	219
9	BE	Belgium	UNIVERSITEIT GENT	198
10	SE	Sweden	CHALMERS TEKNISKA HOEGSKOLA AB	196
11	ES	Spain	UNIVERSIDAD POLITECNICA DE MADRID	187
12	DE	Germany	TECHNISCHE UNIVERSITAET MUENCHEN	176
13	IT	Italy	POLITECNICO DI MILANO	164
14	IL	Israel	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	163
15	DE	Germany	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	159
16	AT	Austria	TECHNISCHE UNIVERSITAET WIEN	158
17	DE	Germany	TECHNISCHE UNIVERSITAET DRESDEN	156
18	NL	Netherlands	TECHNISCHE UNIVERSITEIT EINDHOVEN	152
19	NL	Netherlands	UNIVERSITEIT TWENTE	146
20	FI	Greece	NATIONAL TECHNICAL UNIVERSITY OF ATHENS	140

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## EU Research Ranking

### EU-FP7-Ranking in CESAER-Network: **ERC-Grants**

(Conference of European Schools for Advanced Engineering Education and Research: 60 Partners, TU Vienna only Austrian university)  
[www.cesaer.org](http://www.cesaer.org)

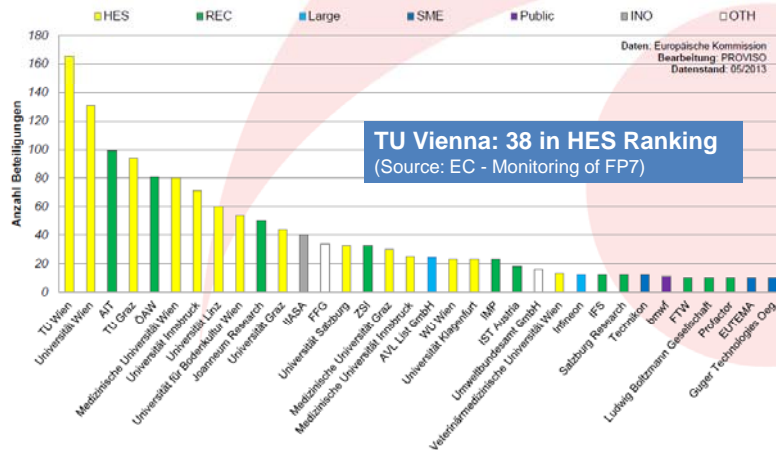


Rank	Country		Institution	ERC
1	CH	Switzerland	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	65
2	CH	Switzerland	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZURICH	54
3	BE	Belgium	KATHOLIEKE UNIVERSITEIT LEUVEN	32
4	IL	Israel	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY.	26
5	DE	Germany	TECHNISCHE UNIVERSITAET MUENCHEN	20
6	NL	Netherlands	UNIVERSITEIT TWENTE	18
7	BE	Belgium	UNIVERSITEIT GENT	17
7	NL	Netherlands	TECHNISCHE UNIVERSITEIT DELFT	17
8	NL	Netherlands	TECHNISCHE UNIVERSITEIT EINDHOVEN	16
8	SE	Sweden	LUNDS UNIVERSITET	16
8	SE	Sweden	KUNGLIGA TEKNISKA HOEGSKOLAN (KTH)	16
9	BE	Belgium	UNIVERSITE CATHOLIQUE DE LOUVAIN	13
10	SE	Sweden	CHALMERS TEKNISKA HOEGSKOLA AB	12
11	FI	Finland	AALTO-KORKEAKOULUSAATIO	11
12	AT	Austria	TECHNISCHE UNIVERSITAET WIEN	9
12	DE	Germany	TECHNISCHE UNIVERSITAET DRESDEN	9
13	DE	Germany	TECHNISCHE UNIVERSITAT BERLIN	8
13	DK	Denmark	DANMARKS TEKNISKE UNIVERSITET	8
13	IE	Ireland	UNIVERSITY COLLEGE DUBLIN, NATIONAL UNIVERSITY OF IRELAND, DUBLIN	8

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## Internationalisation of Research – EU Framework Program 7: TU Wien most successful Austrian Research Institution



<sup>1</sup> Abkürzungen siehe Anhang

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PROVISIO



## ERA-Dialog FFG – TU Wien

### EU-FTI LANDSCHAFT AB 2014

