Technische Universiteit
Eindhoven
University of Technology

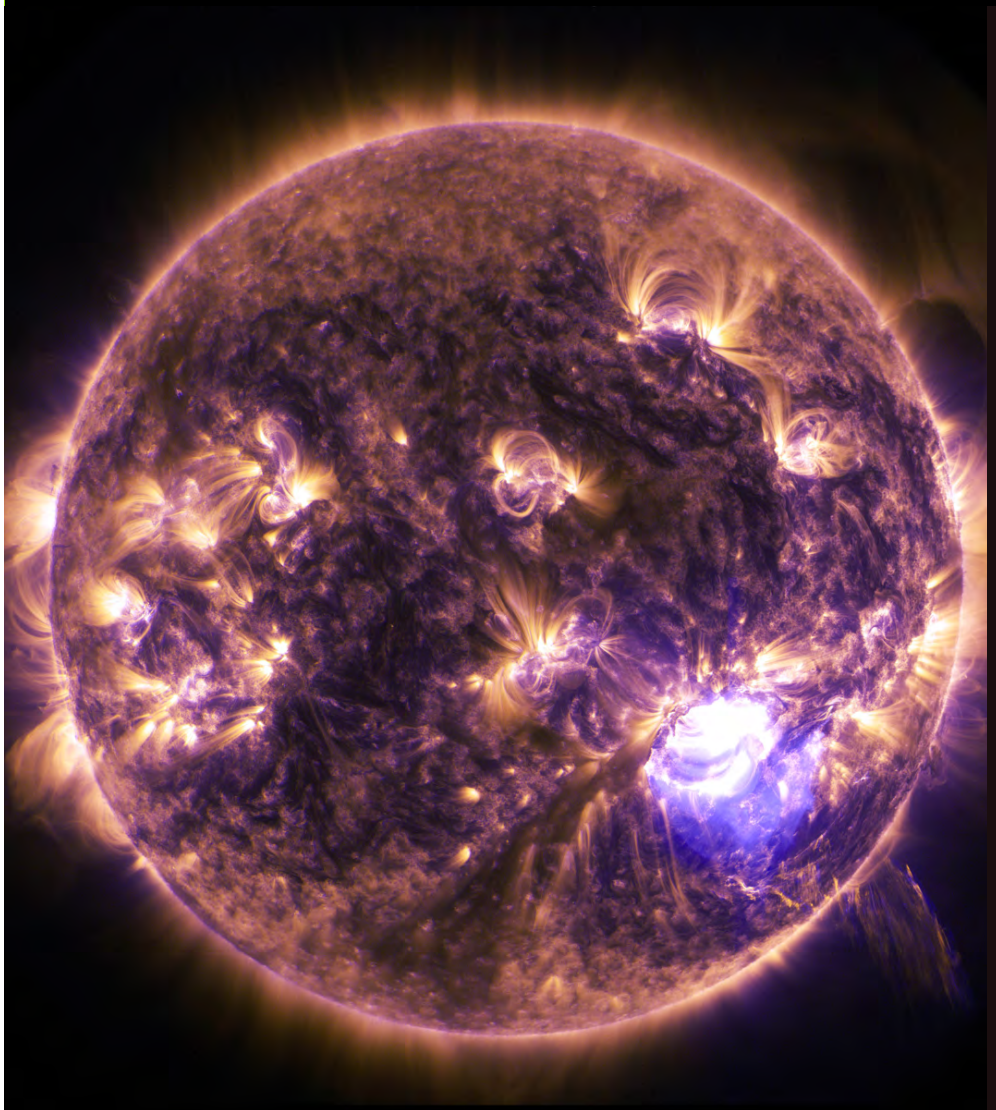
Science and Technology of Nuclear Fusion (MSc)

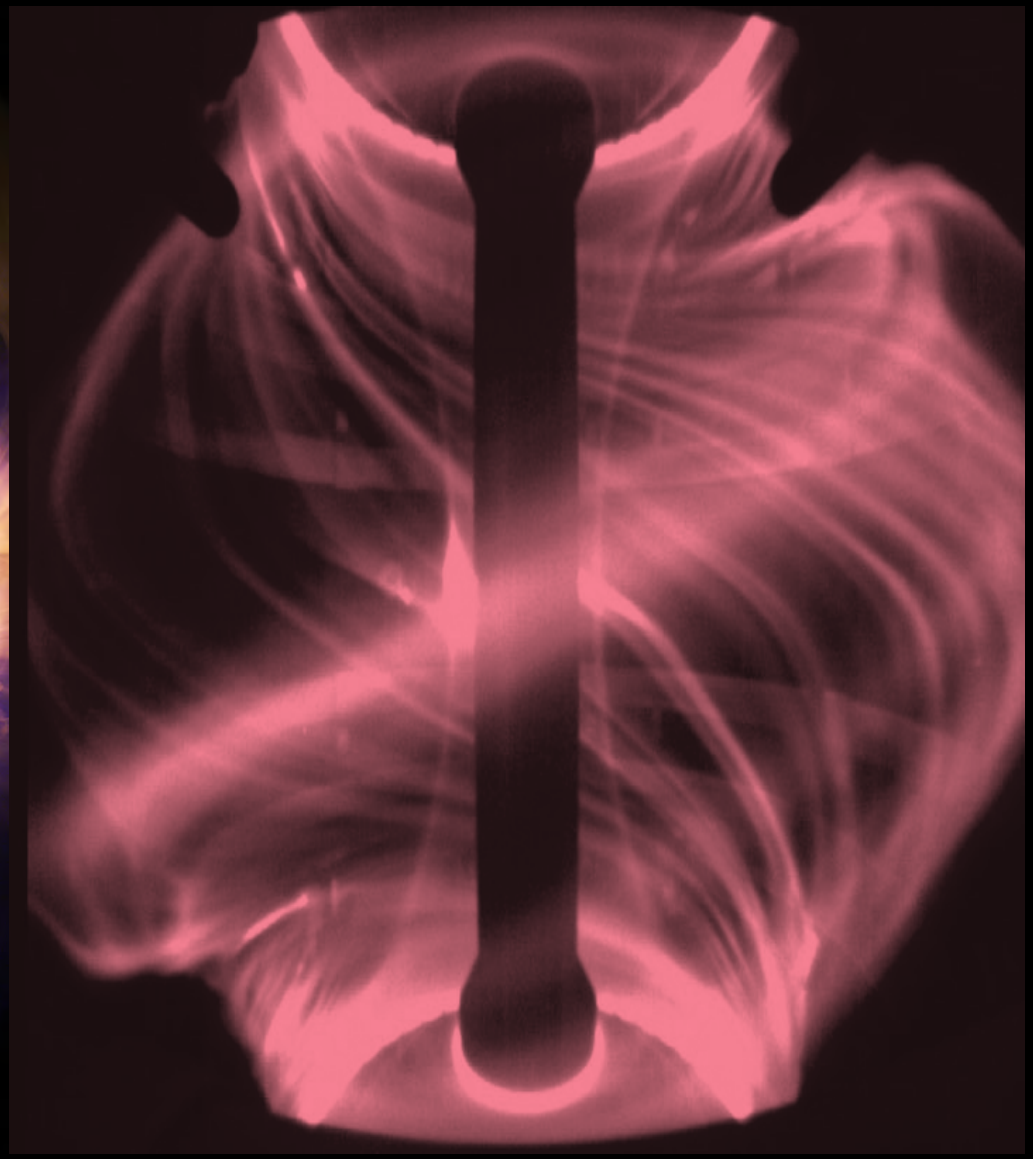
May 2017

MSc Nuclear Fusion @ EINDHOVEN

- Fusion: ultimate challenge in sustainable energy
- Eindhoven: unique fusion specialisation program
- International student population
- Working language = English
- Connected to fusion labs around the world
- Voted ‘best Master’s program’ in the Netherlands!

Where innovation starts





/ Roger Jaspers / Groningen 15-03-2017

Characteristics of the TU/e Fusion MSc program

TU/e Interdisciplinary

Joint programme of the departments

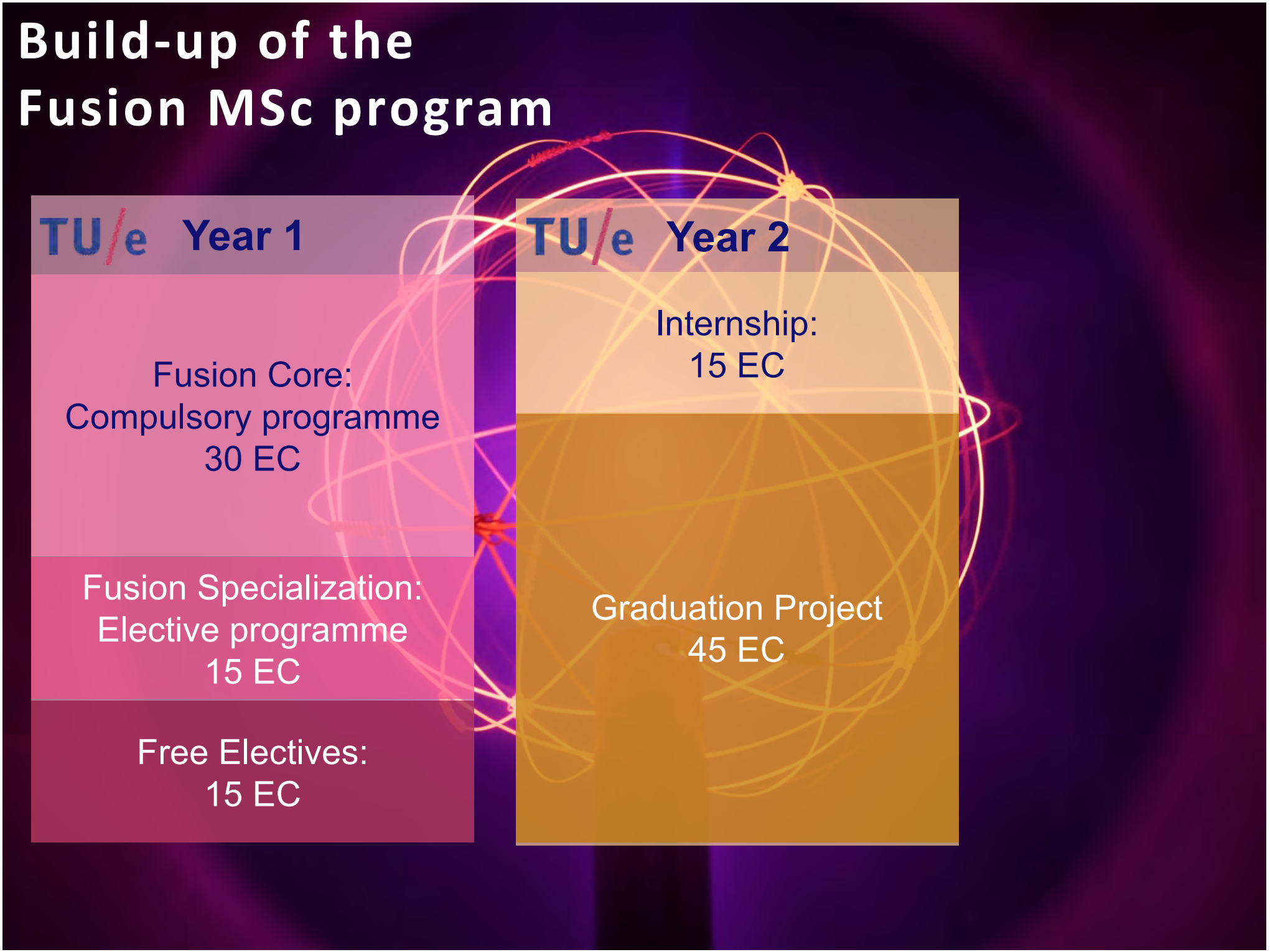
- **Applied Physics**
- **Mechanical Engineering**
- **Electrical Engineering**

You can enter the MSc programme if you hold a Bachelor degree in one of these disciplines, Or something comparable.

Possibility to do a double master, combined with AP, EE or ME

Language = English

Build-up of the Fusion MSc program



Our students do internships in fusion labs around the world:

ITER (France)

Europe
- Cadarache (France)
- Padua, Rome, (Italy)
- Prague (Czech Republic)
- Garching, Greifswald (Germany)
- Lausanne (Switzerland)
- Culham, Didcot (UK)
- Madrid (Spain)
- Lisbon (Portugal)
- Goteborg (Sweden)
- Helsinki (Finland)
- Eindhoven (Netherlands)

Asia
- Hefei, Chengdu (China)
- Naka, Nagoya (Japan)
- Daejeon (S-Korea)

Australia
- Sydney
- Canberra

USA
- MIT (Boston)
- Princeton (NJ)
- GA and UCSD(San Diego)
- UCB (Berkeley)
- Madison (Wisconsin)


ARCTIC OCEAN
ARCTIC OCEAN
SOUTH POLAR REGION
NORTH
ATLANTIC
OCEAN
NORTH
PACIFIC
CHINA
INDIA
INDIAN
OCEAN
BRAZIL
AUSTRALIA
SOUTH
PACIFIC
OCEAN
SOUTH
ATLANTIC
OCEAN
OCEAN


And our students come from all over the world:
Serbia
Poland
Mexico
Brazil
Indonesia
Germany
United Kingdom
USA
Canada
China
Romania
Greece
Italy
Netherlands
Belgian
Russian

The Fusion MSc program: what do you learn?

The Fusion Core (6x 5 EC)
Introduction ‘Fusion on the back of an envelope’
Homologation (physics for engineers, engineering for physicists)
Magnetic Confinement and MHD
Fusion Reactors: extreme materials, intense plasma wall interaction
Model-based Science: Principles and Practice
2 Master Classes (1 week, hot topic, topics vary)

The Fusion MSc program: what do you learn?

The Fusion electives

15 EC (3 modules)

to be chosen from **~30** different fusion-relevant modules, from

Applied Physics, Electrical/Mechanical Engineering.

4 Examples

- Computational and Mathematical Physics
- Systems theory for Control
- Microwave Engineering and Antennas
- Structural Integrity and Reliability
- Heating and Diagnosing Fusion Plasmas

The Fusion MSc program: where do you go?

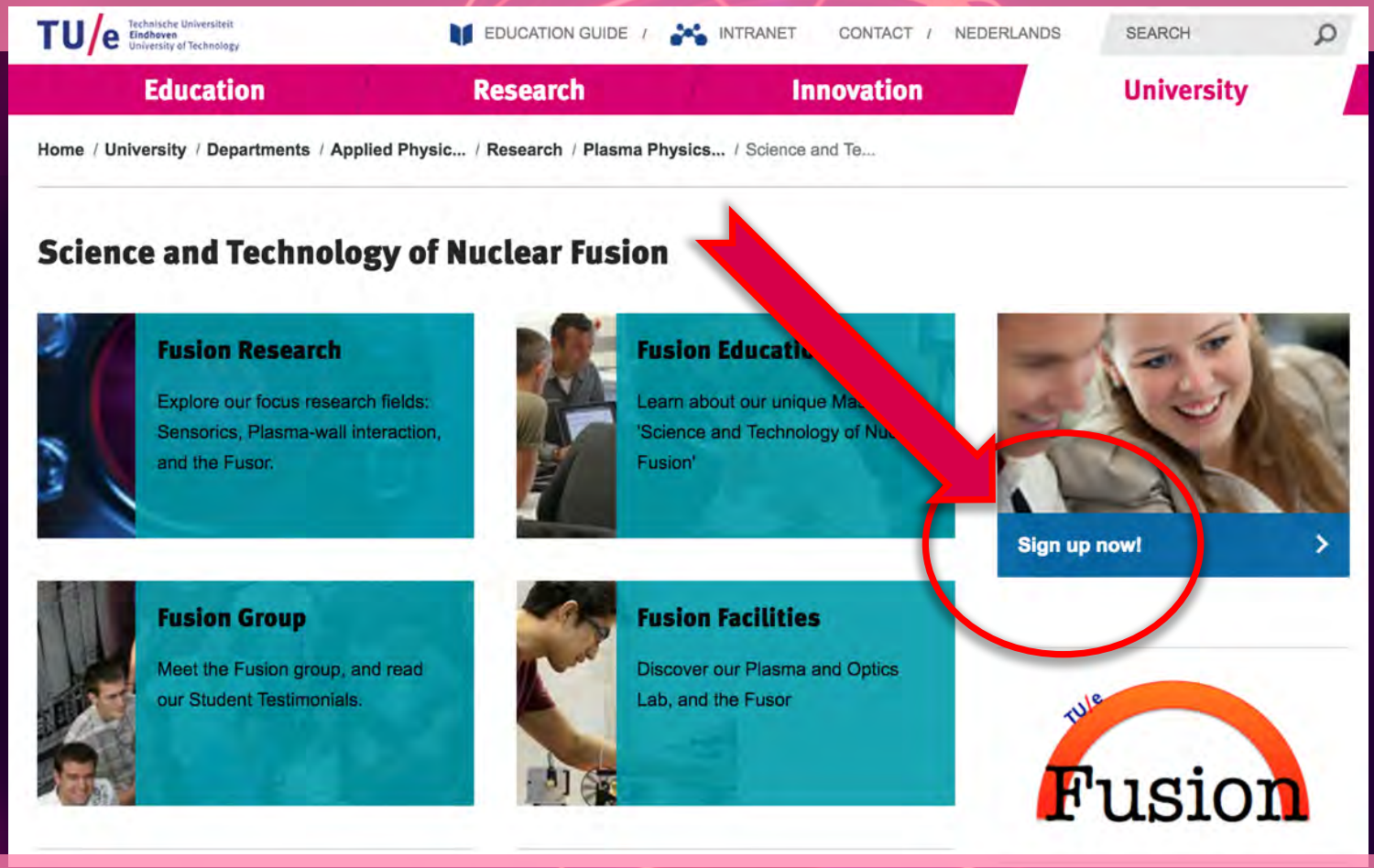
The Fusion MSc prepares for a research career in fusion (obviously)

But equally for a career outside fusion, e.g. in high-tech industry

Student experience: study together

Student experience: hands-on plasma lab

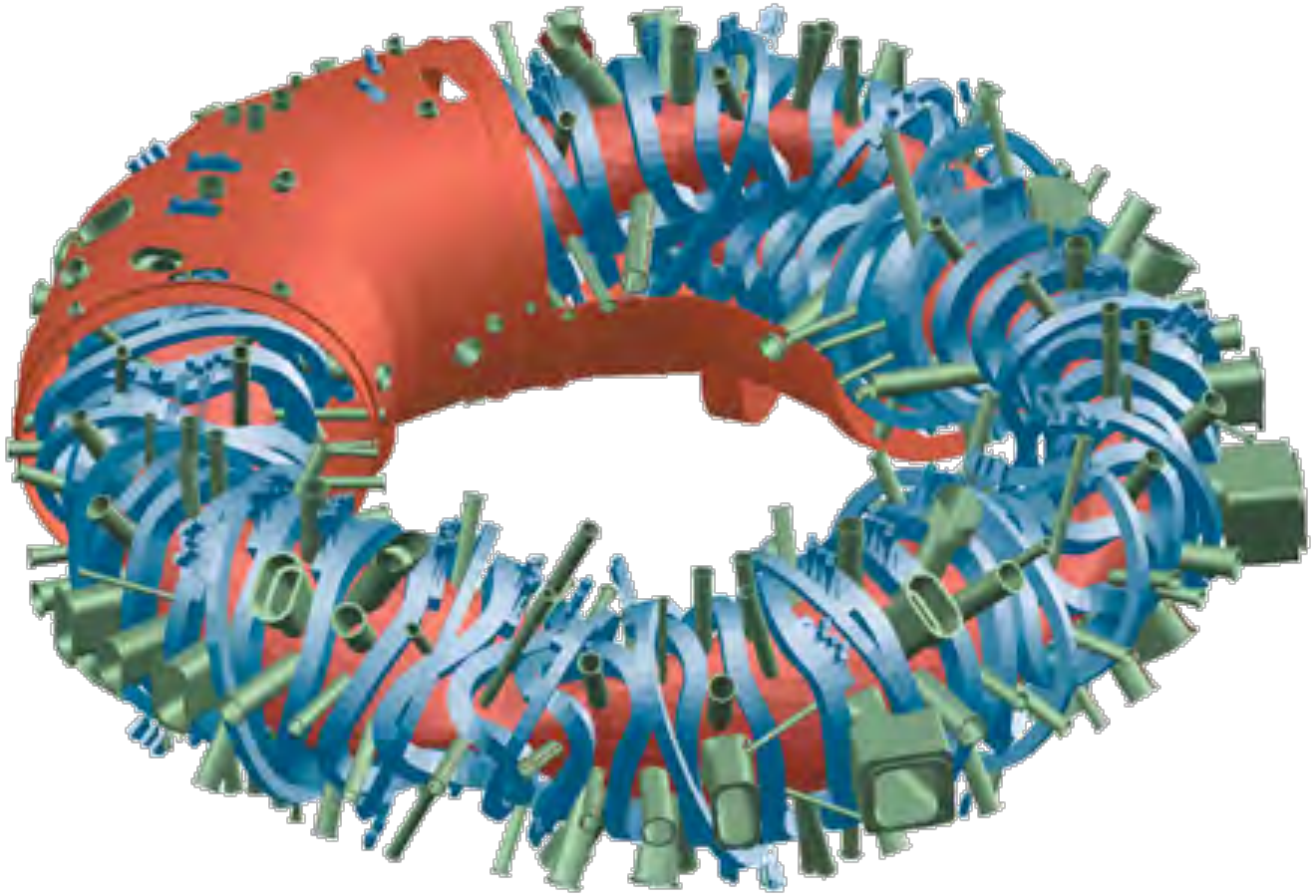
More information/directions for application: http://www.tue.nl/fusion or google ‘fusion tue’



View Webinar at: https://www.tue.nl/studeren/studiekeuze-en-studievoorlichting/tue-webinar-maand/


n the Fusion Experience D
June 8
FUSION IS CLOSER THAN YOU THINK!
The TU/e Fusion
Master Programme
14:00 Introduction:
- The fusion challenge,
- The master Programme
- Example of Student experience:
Live connection with International Fusion
15:00 Guided Tour:
- FUSOR
- Plasmalab
- DIFFER – Magnum PSI
16:30 Student Activities / Drinks in Study Centre
Thursday, June 8 – 14:00-17:30,
Location: PlasmaLab@TU/e (FLUX – 4.089)
Registration: send mail to fusion@tue.nl

Can we be smarter than ITER?



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