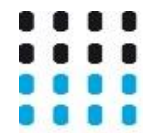


GEMS



Helmholtz-Zentrum
Geesthacht

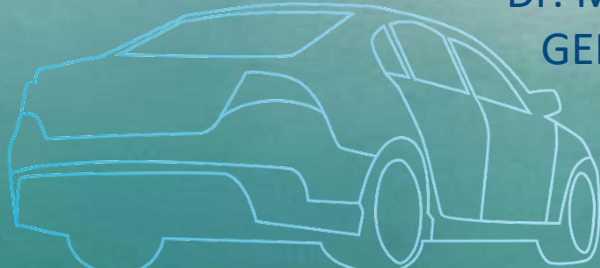
Centre for Materials and Coastal Research



Brilliant Analytics – Access to Neutron and Synchrotron instruments by GEMS

ACCELERATE Research2Business Online-Workshop:
Residual Stress Analysis
March 09, 2021

Dr. Marc Thiry, Industrial Relations Officer
GEMS/Helmholtz-Zentrum Geesthacht



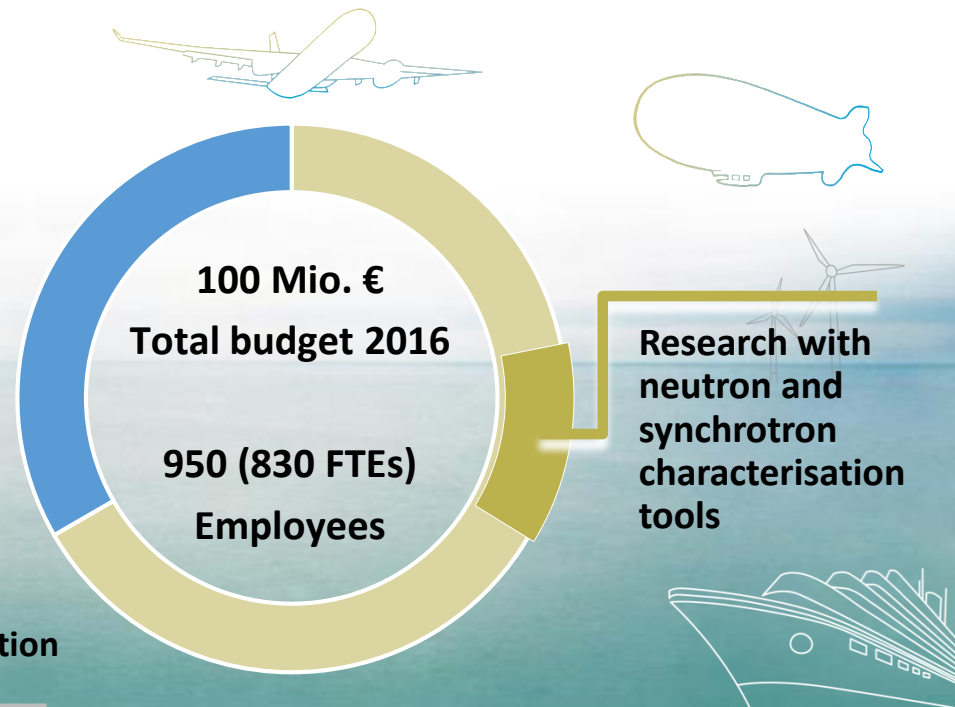
RESEARCH DIRECTIONS

- **Research on Materials and Materials Systems**
(2/3 of budget)
- **Coastal and Climate Research**
(1/3 of budget)

Synchrotron
characterisation
tools at DESY



Neutron
characterisation
tools at MLZ



Preserve resources and guarantee mobility through light-weight and multifunctional materials



Magnesium

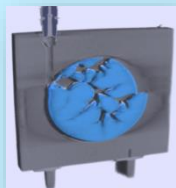


Materials
Mechanics and
Joining

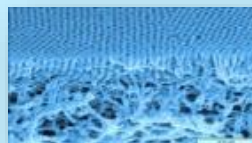
Enable regenerative therapies through new biomaterials



Metallic
Biomaterials



Hydrogen
Storage
Technology



Polymer
Membranes



Multifunctional
Polymers and
Regenerative
Medicine

GEMS

Characterisation:
Synchrotron radiation
Neutrons

- competence and infrastructure for complementary research with photons and neutrons in engineering materials science
- development and operation of own (HZG) beamlines
- unique sample environments for *in situ* studies of engineering processes
- sample preparation and characterization labs
- engineering-specific user support

GEMS

Photons at DESY



PETRA III

Neutrons at MLZ



FRM II

HZG – Photons at DESY

PETRA III

Diffraction

HEMS – High Energy Materials Science

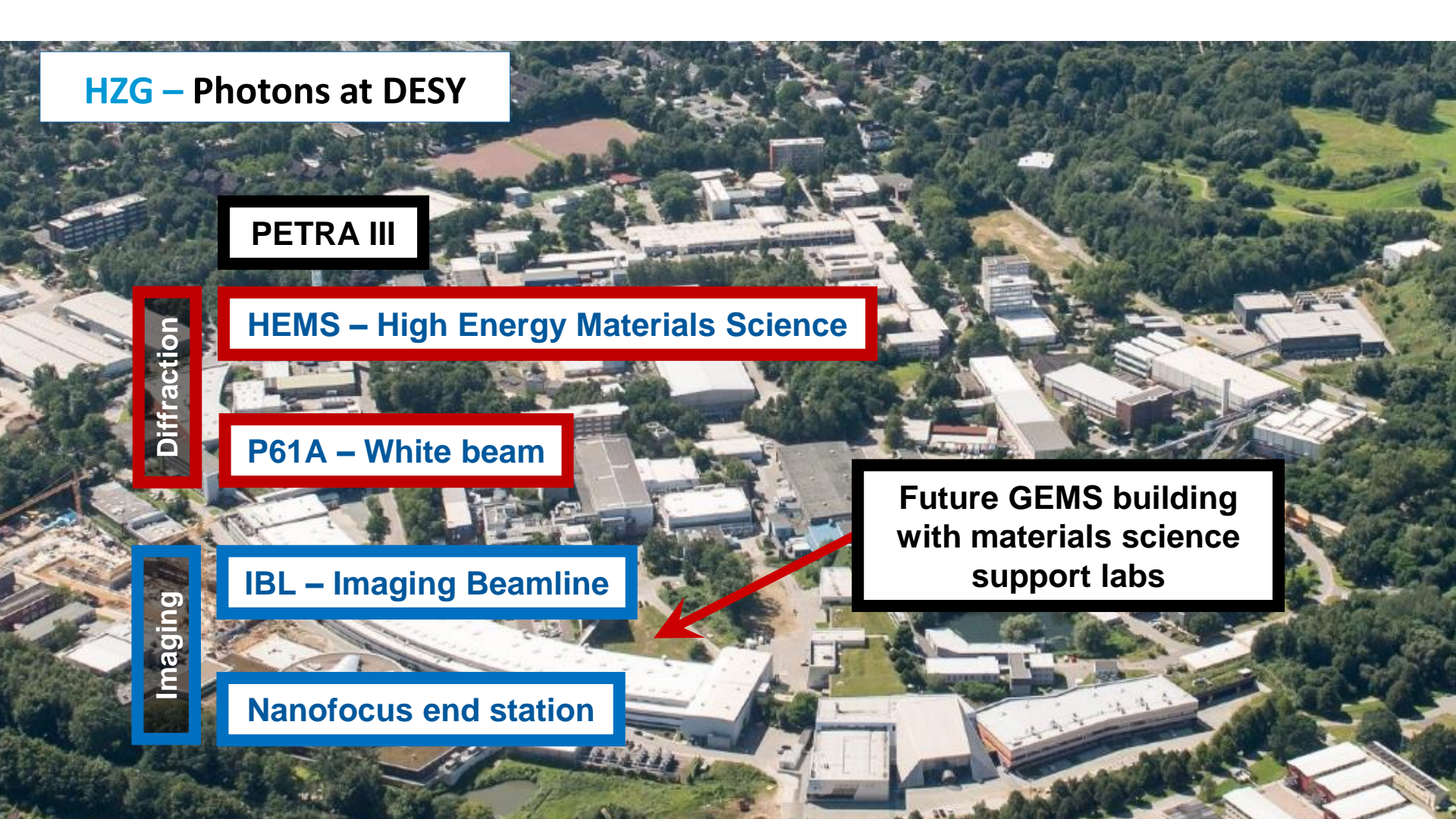
P61A – White beam

Imaging

IBL – Imaging Beamline

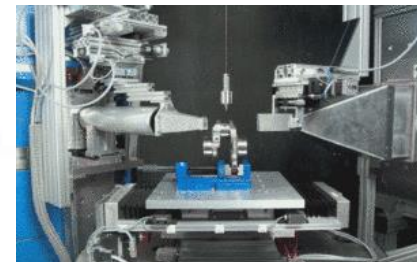
Nanofocus end station

**Future GEMS building
with materials science
support labs**



STRESS-SPEC:
(TUM, HZG)

Texture and residual stress analysis



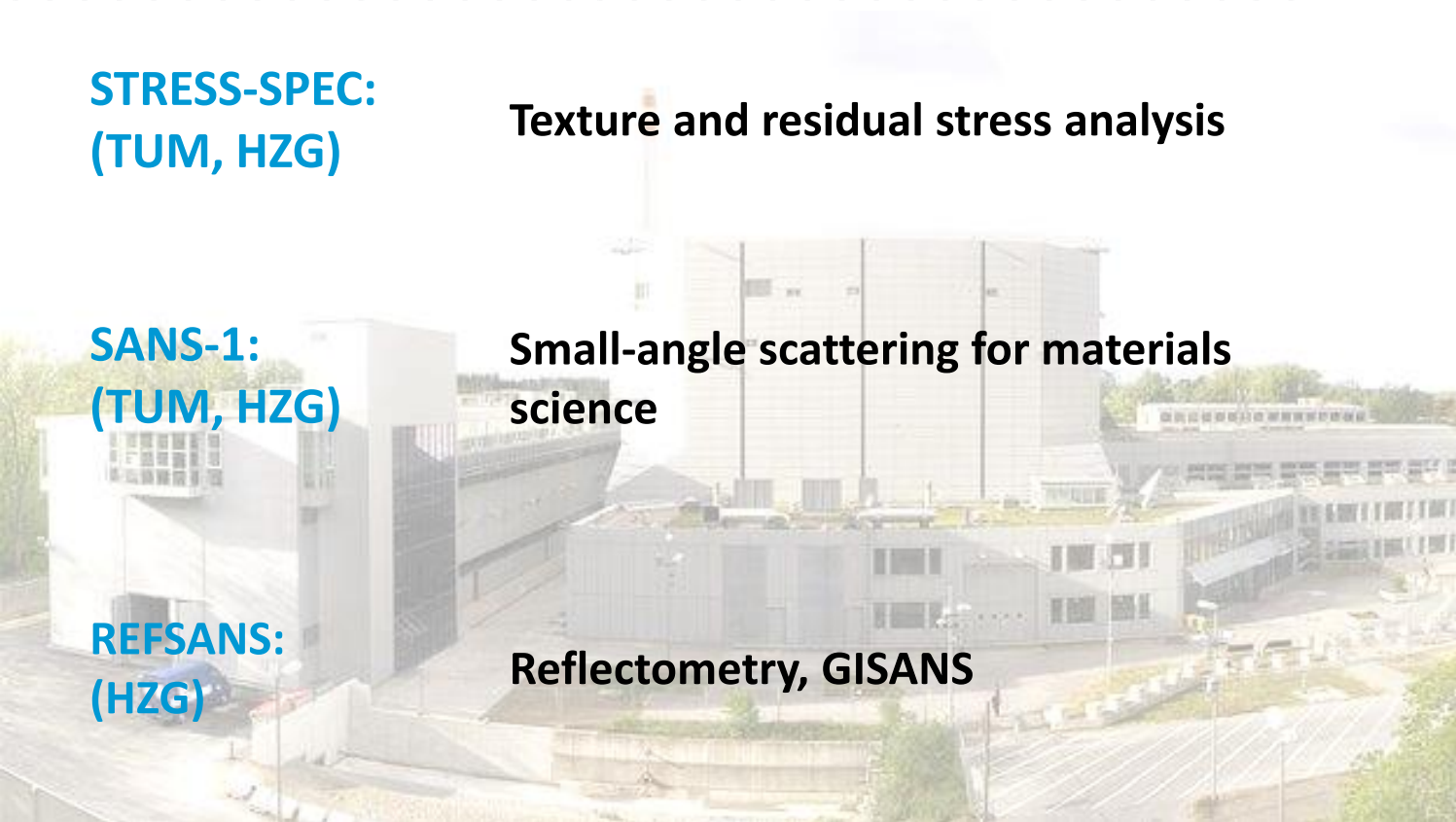
SANS-1:
(TUM, HZG)

**Small-angle scattering for materials
science**

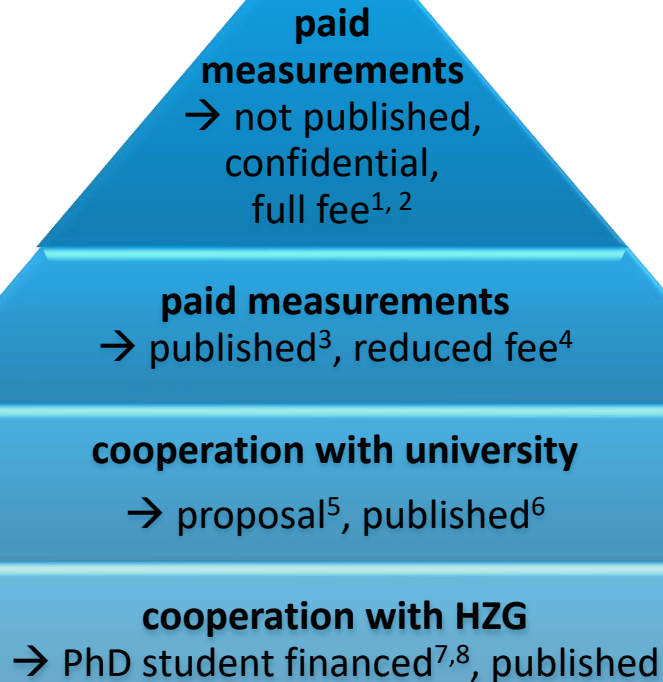


REFSANS:
(HZG)

Reflectometry, GISANS



Possibilities for cooperation



¹ ~300...800 EUR/hour

² test possible at zero costs

³ in ISI-listed journals

⁴ approx. 25% reduction

⁵ proposal by university member

⁶ critical facts confidential

⁷ contract-based

⁸ largest added value

Thank you for your attention!



GEMS

gems.hzg.de

FÜR DEN MENSCHEN
UND SEINEN LEBENSRAUM
VON MORGEN

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