

**NE**XT *Level* for **NE**XT *Gens*

**HZDR**  
HELMHOLTZ ZENTRUM  
DRESDEN ROSSENDORF



# Cutting-Edge Research @ HZDR

Helmholtz-Zentrum Dresden-Rossendorf

Board of Directors: Prof. Dr. Sebastian M. Schmidt | Dr. Diana Stiller | Helmholtz-Zentrum Dresden-Rossendorf



# HZDR – Working on New Solutions

The HZDR faces the **grand challenges of our time** by providing knowledge and technologies for the next generations in order to:

## HEALTH

develop **radiation based** diagnostic and therapeutic methods to combat **cancer**,



## ENERGY

support the transition to sustainable industry through **resource** and **energy efficiency**, and



## MATTER

research **future materials and technologies under extreme fields** and develop them to the point of application.



# HZDR – Facts and Numbers

## Founding

1956 – ZfK  
1992 – FZR  
2011 – HZDR



## Budget

ca. 120 Mio. € (90:10)  
+ ca. 30 Mio. € 3rd party-f.



## Research

Transformation  
of the Energy System



Health Research



Materials and Technologies



## Personnel

1.440 total (12/2022)

497 Scientists  
39 Professors  
203 PhDs



42 Apprentices

more than 60 Nationalities

## Transfer

HZDR  
INNOVATION

Own exploitation company  
HZDRI

ca. 5 Mio € Revenue

## Research Sites



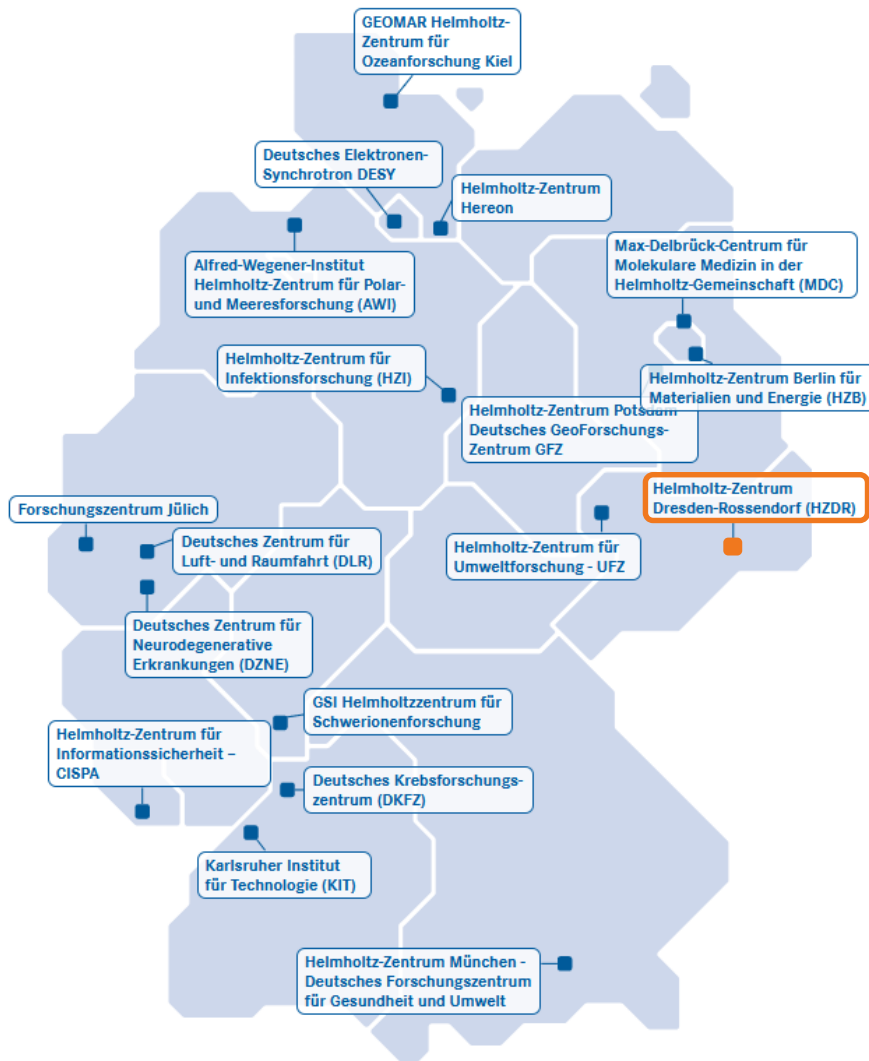
Dresden, Freiberg, Görlitz  
Leipzig, Grenoble (ESRF),  
Hamburg (XFEL)

## Strategy

# 2030+

- Complex and unique large RIs in user operation (peer-review)
- International talents
- Close cooperation with science and industry

# HZDR – Member of the Helmholtz Association



- Created in 1995
- **18 autonomous Helmholtz Centers**
- Total annual **budget** of 5 billion euros
- Around 43.000 **employees**
- annually around 2.000 joint projects with **business enterprises**
- **6 research areas:**
  - Energy
  - Earth & Environment
  - Health
  - Aeronautics, Space and Transport
  - Matter
  - Information



ENERGY



HEALTH



MATTER



## Board of Directors

Prof. S. M. Schmidt  
Dr. D. Stiller



### Institute of Fluid Dynamics

Dr. G. Gerbeth



### Institute of Radiation Physics

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### CASUS – Center for Advanced Systems Understanding

Prof. R. Sauerbrey



### Dresden High Magnetic Field Laboratory HLD

Prof. J. Wosnitza



### Department of Information Services and Computing

Dr. U. Konrad



### Helmholtz Institute Freiberg for Resource Technology

Dr. J. Gutzmer



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Prof. M. Krause



### Institute of Ion Beam Physics and Materials Research

Prof. M. Helm  
Prof. J. Fassbender



### Department of Research Technology

Prof. P. Kaever

# HZDR – Research infrastructure at 6 locations



**HIBEF**

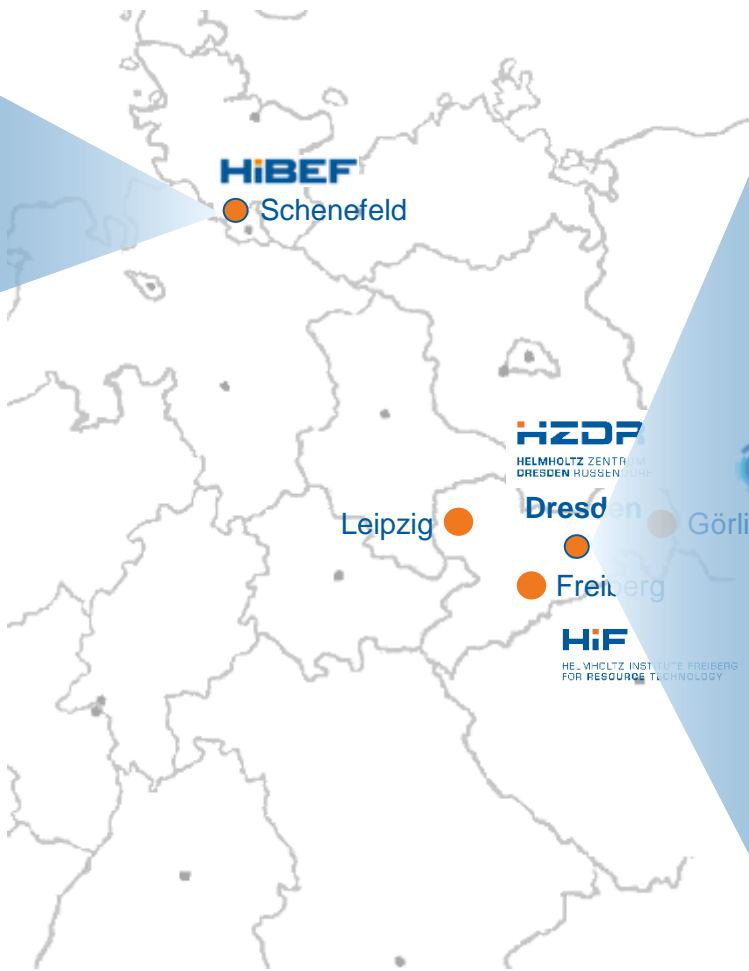
Helmholtz International Beamline for Extreme Fields @ European XFEL



**ROBL**

Rossendorf Beamline @ ESRF

**ROBL**



**HLD**

High Magnetic Field Laboratory Dresden



**IBC**

Ion Beam Center



**ELBE**

Photon and particle source




**DRACO & PENELOPE**

High-power Laser-particle Acceleration



 **ZRT** – Center for Radiopharmaceutical Tumor Research




 **TOPFLOW** – Transient Two Phase Flow Test Facility


- Investigation of complex flow phenomena under realistic industry-relevant conditions



 **Metallurgy Pilot Plant** Freiberg

 **DRESDYN** – (DREsden Sodium facility for DYNamo and thermohydraulic studies)

- Large-scale liquid sodium experiments with geo- and astrophysical background

 **Felsenkeller** Lab

- 5 MV underground accelerator for experiments in nuclear astrophysics



 **HPC** - High Performance Computing

# HZDR – Summer Student Program



## Project and Lectures

Matching between applications and research projects

Lecture series designed to provide insight into research work in the various areas of the HZDR

## Who can apply?

All advanced undergraduate or master students of natural sciences (physical and life sciences) or related areas.

## Deadline for applications

Students should apply before

February 28th 2024

Notification of acceptance:

Middle of April 2024

## Contact

Yvonne Matthes - International Office

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# HZDR – Local Partners and Partners around the Globe

- Securing competences through partnerships
- Networking at local, national and international level
- **DRESDEN-concept**-Network as strong local advantage
- Strategic cooperative relationships in the border triangle  
Germany – Poland - Czech Republic
- Partner of the Georgian – German Science Bridge



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