

# 2023 HZDR Science Conference



## Report of Contributions

Contribution ID: 1

Type: **not specified**

# Opening Speech

*Wednesday 15 November 2023 13:00 (5 minutes)*

**Presenter:** Prof. SCHMIDT, Sebastian

Contribution ID: 2

Type: **not specified**

## Science Conference Photo

Contribution ID: 3

Type: **not specified**

## Closing Speech

*Thursday 16 November 2023 12:32 (8 minutes)*

**Presenter:** Prof. SCHMIDT, Sebastian

Contribution ID: 4

Type: **not specified**

## **TALK: Water as a resource**

*Wednesday 15 November 2023 13:05 (12 minutes)*

**Presenter:** Dr REINECKE, Sebastian Felix (FWD)

**Session Classification:** Session 1

Contribution ID: 5

Type: **not specified**

## **PITCH: AutoTarget : Autonomous Multi-UAV (Unmanned Aerial Vehicle) for the Characterization of Remote and Isolated Targets**

*Wednesday 15 November 2023 13:17 (5 minutes)*

**Presenter:** Mr ADONI, Will Hamilton (FWG)

**Session Classification:** Session 1

Contribution ID: 6

Type: **not specified**

## **TALK: FIB-tailored quantum-matter experiments**

*Wednesday 15 November 2023 13:22 (15 minutes)*

**Presenter:** Dr HELM, Toni (FWH)

**Session Classification:** Session 1

Contribution ID: 7

Type: **not specified**

## **PITCH: Optical and magnetic properties of van der Waals Layered CrSBr**

*Wednesday 15 November 2023 13:37 (5 minutes)*

**Presenter:** Ms LIN, Kaiman (FWI)

**Session Classification:** Session 1



Contribution ID: 8

Type: **not specified**

## **TALK: ELBE to DALI: In Pursuit of High-Power Radiation for Science**

*Wednesday 15 November 2023 13:42 (12 minutes)*

**Presenter:** Dr KLOPF, J. Michael (FWK)

**Session Classification:** Session 1

Contribution ID: 9

Type: **not specified**

## **PITCH: Next-generation radioimmunotherapy for head and neck squamous cell carcinoma (HNSCC) using CAR-T cells combined with photon vs. proton vs. carbon irradiation**

*Wednesday 15 November 2023 13:54 (5 minutes)*

**Presenter:** Ms DEMIR, Melike (FWM)

**Session Classification:** Session 1

Contribution ID: **10**

Type: **not specified**

## **PITCH: Novel two-dimensional materials for applications in chemistry, physics, and materials science**

**Presenter:** Dr KUC, Agnieszka (FWU)

**Session Classification:** Session 1

Contribution ID: 11

Type: **not specified**

## **TALK: Microstructural Characterization of Reactor Pressure Vessel Steels by Electron Microscopy**

*Wednesday 15 November 2023 13:59 (15 minutes)*

**Presenter:** Dr CHEKHONIN, Paul (FWO)

**Session Classification:** Session 1

Contribution ID: 12

Type: **not specified**

## **PITCH: Probing the quantum vacuum with high-intensity lasers**

*Wednesday 15 November 2023 14:14 (5 minutes)*

**Presenter:** Dr EVANS, Stefan (FWZ)

**Session Classification:** Session 1

Contribution ID: 13

Type: **not specified**

## **PITCH: Extended-gate Field-effect transistor (EG-FET) biosensor for quantification of immunotherapeutic agents**

*Wednesday 15 November 2023 14:19 (5 minutes)*

**Presenter:** Ms CELA, Isli (FWP)

**Session Classification:** Session 1

Contribution ID: 14

Type: **not specified**

## **PITCH: Towards the Measurement of Vacuum Birefringence at XFEL**

*Wednesday 15 November 2023 14:45 (5 minutes)*

**Presenter:** Dr ŠMÍD, Michal (FWK)

**Session Classification:** Session 2

Contribution ID: 15

Type: **not specified**

## **PITCH: Microstructure modeling for mineral processing**

*Wednesday 15 November 2023 14:50 (5 minutes)*

**Presenter:** Dr BALLANI, Felix (FWG)

**Session Classification:** Session 2



Contribution ID: 16

Type: **not specified**

## **TALK: Analyzing 3-phase Foams in Batch Flotation: a joint FWD-HIF Study**

*Wednesday 15 November 2023 15:00 (12 minutes)*

**Presenter:** Ms MARQUARDT, Tine (FWD)

**Session Classification:** Session 2

Contribution ID: 17

Type: **not specified**

## **PITCH: Waves of curvilinear magnets**

*Wednesday 15 November 2023 15:22 (5 minutes)*

**Presenter:** Dr KÁKAY, Attila (FWI)

**Session Classification:** Session 2

Contribution ID: 18

Type: **not specified**

## **PITCH: Kidnapping Deep Learning-based Multirotors using Optimized Flying Adversarial Patches**

*Wednesday 15 November 2023 15:12 (5 minutes)*

**Presenter:** Ms HANFELD, Pia (FWU)

**Session Classification:** Session 2

Contribution ID: **19**

Type: **not specified**

## **TALK: Functional NMR in Aqueous Systems**

**Presenter:** Dr KRETZSCHMAR, Jerome (FWO)

**Session Classification:** Session 2

Contribution ID: 20

Type: **not specified**

## **PITCH: Nanocytometry as a tool for prognostic analysis in prostate cancer treated with radiotherapy**

*Wednesday 15 November 2023 15:17 (5 minutes)*

**Presenter:** Ms MARKL, Anja Madleine (FWM)

**Session Classification:** Session 2

Contribution ID: 21

Type: **not specified**

## **PITCH: Fine Particle Separation Technologies for Electrolyser Catalysts containing PGMs**

*Wednesday 15 November 2023 14:55 (5 minutes)*

**Presenter:** Ms AHN, Sohyun (FWG)

**Session Classification:** Session 2

Contribution ID: 22

Type: **not specified**

## **TALK: Terahertz harmonics –a new tool for exploring complex material properties**

**Presenter:** Dr DEINERT, Jan-Christoph (FWK)

**Session Classification:** Session 2

Contribution ID: 23

Type: **not specified**

## **PITCH: Cyclotron-based production of copper radioisotopes: $^{61}\text{Cu}$ and $^{67}\text{Cu}$**

*Wednesday 15 November 2023 15:47 (5 minutes)*

**Presenter:** Mr BRÜHLMANN, Santiago (FWP)

**Session Classification:** Session 2



Contribution ID: 24

Type: **not specified**

## **PITCH: Monte-Carlo Event Generation for Collider Experiments of Electron Beams and X-ray Lasers**

**Presenter:** Dr HERNANDEZ ACOSTA, Uwe (FWU)

**Session Classification:** Session 2

Contribution ID: 25

Type: **not specified**

## **PITCH: The sunny beats of resonance**

*Wednesday 15 November 2023 16:20 (5 minutes)*

**Presenter:** Dr STEFANI, Frank (FWD)

**Session Classification:** Session 3

Contribution ID: 26

Type: **not specified**

## **TALK: Ion-induced telecom single-photon emitters in silicon**

*Wednesday 15 November 2023 16:25 (15 minutes)*

**Presenter:** Dr ASTAKHOV, Georgy (FWI)

**Session Classification:** Session 3

Contribution ID: 27

Type: **not specified**

## **PITCH: Unraveling Dynamics of Protein Hydration Water with TELBE**

*Wednesday 15 November 2023 16:40 (5 minutes)*

**Presenter:** Dr ADAMS, Ellen (FWO)

**Session Classification:** Session 3

Contribution ID: 28

Type: **not specified**

## **PITCH: Microbial degradation of graphene - Risk or Chance for circular economy?**

*Wednesday 15 November 2023 16:45 (5 minutes)*

**Presenter:** Dr JAIN, Purvi (FWG)

**Session Classification:** Session 3

Contribution ID: 29

Type: **not specified**

## **TALK: MeV ultrafast electron diffraction at MHz repetition rates**

*Wednesday 15 November 2023 16:50 (12 minutes)*

**Presenter:** Dr NIEMCZYK, Raffael (FWK)

**Session Classification:** Session 3

Contribution ID: 30

Type: **not specified**

## **PITCH: Novel Machine Learning Approaches to Study Infection and Disease through Biomedical Images**

*Wednesday 15 November 2023 17:02 (5 minutes)*

**Presenter:** Dr YAKIMOVICH, Artur (FWU)

**Session Classification:** Session 3

Contribution ID: **31**

Type: **not specified**

## **PITCH: Particle Fluid Dynamics**

*Wednesday 15 November 2023 17:07 (5 minutes)*

**Presenter:** Dr LECRIVAIN, Gregory (FWD)

**Session Classification:** Session 3



Contribution ID: 32

Type: **not specified**

## **TALK: Application of Deep Learning for Improved Quantitative PET Imaging**

*Wednesday 15 November 2023 17:12 (15 minutes)*

**Presenter:** Dr NIKULIN, Pavel (FWP)

**Session Classification:** Session 3

Contribution ID: 33

Type: **not specified**

## **PITCH: Novel Mixed-Dimensional hBN-Passivated Silicon Nanowire Reconfigurable Field-Effect Transistors: Fabrication and Characterization**

*Wednesday 15 November 2023 17:27 (5 minutes)*

**Presenter:** Mr GHOSH, Sayantan (FWI)

**Session Classification:** Session 3

Contribution ID: 34

Type: **not specified**

## **PITCH: Development of new exploration vectors by quantitative mineralogical analysis at the Spremberg-Graustein-Schleife Cu-Ag Kupferschiefer deposit**

*Wednesday 15 November 2023 17:32 (5 minutes)*

**Presenter:** Dr KIM, Yonghwi (FWG)

**Session Classification:** Session 3

Contribution ID: 35

Type: **not specified**

## **PITCH: Positrons enable analysis of defects in functional materials**

*Thursday 16 November 2023 08:30 (5 minutes)*

**Presenter:** Dr LIEDKE, Maciej Oskar (FWK)

**Session Classification:** Session 4

Contribution ID: 36

Type: **not specified**

## **PITCH: CO2 Gas Sensor for Improved Indoor Air Quality**

*Thursday 16 November 2023 08:35 (5 minutes)*

**Presenter:** Dr LAMBEVA, Nikol (FWI)

**Session Classification:** Session 4

Contribution ID: 37

Type: **not specified**

## **TALK: Monitoring and characterization of flow and transport processes using magnetic field measurements**

*Thursday 16 November 2023 08:40 (12 minutes)*

**Presenter:** Mr SCHMIDTPETER, Jan (FWD)

**Session Classification:** Session 4

Contribution ID: 38

Type: **not specified**

## **PITCH: Metal recovery by ion flotation using biomolecules**

**Presenter:** Dr CHAKANKAR, Mital Vivek (FWG)

**Session Classification:** Session 4

Contribution ID: 39

Type: **not specified**

## **TALK: Cancer immunotheranostics using adaptor CAR technologies and target modules**

*Thursday 16 November 2023 09:27 (15 minutes)*

**Presenter:** Dr LOUREIRO, Liliana (FWP)

**Session Classification:** Session 4



Contribution ID: 40

Type: **not specified**

## **PITCH: Reactive transport in porous materials: current trends and challenges**

*Thursday 16 November 2023 08:57 (5 minutes)*

**Presenter:** Dr FISCHER, Cornelius (FWO)

**Session Classification:** Session 4

Contribution ID: 41

Type: **not specified**

## **TALK: From the refrigerator magnet to the magnetic refrigerator**

*Thursday 16 November 2023 09:02 (15 minutes)*

**Presenter:** Dr GOTTSCHALL, Tino (FWH)

**Session Classification:** Session 4

Contribution ID: 42

Type: **not specified**

# **PITCH: The MALA Package –Transferable and Scalable Electronic Structure Simulations Powered by Machine Learning**

*Thursday 16 November 2023 09:17 (5 minutes)*

**Presenter:** Mr CANGI, Attila (FWU)

**Session Classification:** Session 4

Contribution ID: 43

Type: **not specified**

## **PITCH: Industrial slag valorization by putting circular economy in practice**

*Thursday 16 November 2023 09:22 (5 minutes)*

**Presenter:** Mr VISWAMSETTY, Lakshmi Kanth (FWG)

**Session Classification:** Session 4

Contribution ID: 44

Type: **not specified**

## **PITCH: THz-driven dynamics of exciton complexes in ultrathin semiconductors**

**Presenter:** Dr SUN, Xiaoxiao (FWI)

**Session Classification:** Session 4

Contribution ID: 45

Type: **not specified**

## **PITCH: Parametric anti-resonance in aluminum electrolysis cells and liquid metal batteries: a new approach to improve cell stability**

*Thursday 16 November 2023 10:05 (5 minutes)*

**Presenter:** Dr HORSTMANN, Gerrit Maik (FWD)

**Session Classification:** Session 5

Contribution ID: 46

Type: **not specified**

## **TALK: Measurements of $^{12}\text{C}(p,\gamma)^{13}\text{N}$ for Nuclear Astrophysics at the Felsenkeller and LUNA Underground Accelerators**

*Thursday 16 November 2023 10:45 (12 minutes)*

**Presenter:** Dr BOELTZIG, Axel (FWK)

**Session Classification:** Session 5

Contribution ID: 47

Type: **not specified**

## **PITCH: Fighting against Cancer –Alpha Emitters for Targeted Alpha Therapy**

*Thursday 16 November 2023 10:10 (5 minutes)*

**Presenter:** Ms BLEI, Magdalena (FWP)

**Session Classification:** Session 5



Contribution ID: 48

Type: **not specified**

## **PITCH: Understanding warm dense matter: from ab initio simulations to experiments**

*Thursday 16 November 2023 10:30 (5 minutes)*

**Presenter:** Dr DORNHEIM, Tobias (FWU)

**Session Classification:** Session 5

Contribution ID: 49

Type: **not specified**

## **TALK: Rossendorf Beamline at ESRF for Material Science Applications**

*Thursday 16 November 2023 10:15 (15 minutes)*

**Presenter:** Prof. KVASHNINA, Kristina (FWO)

**Session Classification:** Session 5

Contribution ID: 50

Type: **not specified**

## **PITCH: Membraneless Electrolyzers**

*Thursday 16 November 2023 10:35 (5 minutes)*

**Presenter:** Prof. ECKERT, Kerstin (FWD)

**Session Classification:** Session 5

Contribution ID: 51

Type: **not specified**

## **PITCH: Interpretable preclinical radiomics: Translating predictive power of AI from mice to (hu)man**

*Thursday 16 November 2023 10:40 (5 minutes)*

**Presenter:** Dr MICHLIKOVA, Sona (FWM)

**Session Classification:** Session 5

Contribution ID: 52

Type: **not specified**

## **TALK: Novel methods of isobar suppression at the new accelerator mass spectrometer HAMSTER**

**Presenter:** Dr LACHNER, Johannes (FWI)

**Session Classification:** Session 5

Contribution ID: 53

Type: **not specified**

## **PITCH: A smart sensor network for improved identification of plastics in e-waste recycling streams**

*Thursday 16 November 2023 10:57 (5 minutes)*

**Presenter:** Dr FUCHS, Margret (FWG)

**Session Classification:** Session 5

Contribution ID: 54

Type: **not specified**

## **PITCH: PIconGPU - The Racehorse for Modeling Laser Plasma Accelerators**

*Thursday 16 November 2023 11:02 (5 minutes)*

**Presenter:** Dr PAUSCH, Richard (FWK)

**Session Classification:** Session 5

Contribution ID: 55

Type: **not specified**

## **PITCH: The MultiMorph model for industrial gas-liquid flows**

*Thursday 16 November 2023 11:30 (5 minutes)*

**Presenter:** Dr SCHLEGEL, Fabian (FWD)

**Session Classification:** Session 6



Contribution ID: 56

Type: **not specified**

## **PITCH: Predictive Design of Novel Two-Dimensional Materials**

*Thursday 16 November 2023 11:35 (5 minutes)*

**Presenter:** Dr FRIEDRICH, Rico (FWI)

**Session Classification:** Session 6

Contribution ID: 57

Type: **not specified**

## **TALK: Development of PET radiotracers for non-invasive imaging of glioma**

*Thursday 16 November 2023 11:40 (15 minutes)*

**Presenter:** Dr TOUSSAINT, Magali (FWP)

**Session Classification:** Session 6

Contribution ID: 58

Type: **not specified**

## **PITCH: Microbial immobilization of technetium-99**

*Thursday 16 November 2023 11:55 (5 minutes)*

**Presenter:** Ms CARDAIO, Irene (FWO)

**Session Classification:** Session 6

Contribution ID: 59

Type: **not specified**

# **PITCH: Interface Properties and Surface Modification in Engineered Artificial Minerals Processing**

*Thursday 16 November 2023 12:00 (5 minutes)*

**Presenter:** Ms STRUBE, Franziska (FWG)

**Session Classification:** Session 6

Contribution ID: 60

Type: **not specified**

## **TALK: Exploring the FLASH Effect with the Help of a Laser Accelerator and High-Field Magnets**

*Thursday 16 November 2023 12:05 (12 minutes)*

**Presenter:** Dr KROLL, Florian (FWK)

**Session Classification:** Session 6

Contribution ID: 61

Type: **not specified**

## **PITCH: Optimizing animal movement studies: developing an application to evaluate study design**

*Thursday 16 November 2023 12:17 (5 minutes)*

**Presenter:** Dr SIMÕES SILVA, Inês Maria (FWU)

**Session Classification:** Session 6

Contribution ID: **62**

Type: **not specified**

## **PITCH: Muon imaging for industrial applications**

*Thursday 16 November 2023 12:22 (5 minutes)*

**Presenter:** Dr WAGNER, Michael (FWD)

**Session Classification:** Session 6

Contribution ID: 63

Type: **not specified**

## **PITCH: TIBUSSII - the first triple beam single ion implantation setup for quantum applications**

*Thursday 16 November 2023 12:27 (5 minutes)*

**Presenter:** Dr KLINGNER, Nico (FWI)

**Session Classification:** Session 6



Contribution ID: 64

Type: **not specified**

## **PITCH: Monte-Carlo Event Generation for Collider Experiments of Electron Beams and X-ray Lasers**

*Thursday 16 November 2023 08:52 (5 minutes)*

**Presenter:** Dr HERNANDEZ ACOSTA, Uwe (FWU)

**Session Classification:** Session 4

Contribution ID: 65

Type: **not specified**

## **PITCH: THz-driven dynamics of exciton complexes in ultrathin semiconductors**

*Wednesday 15 November 2023 15:52 (5 minutes)*

**Presenter:** Dr SUN, Xiaoxiao (FWI)

**Session Classification:** Session 2

Contribution ID: 66

Type: **not specified**

## **TALK: Novel methods of isobar suppression at the new accelerator mass spectrometer HAMSTER**

*Wednesday 15 November 2023 15:27 (15 minutes)*

**Presenter:** Dr LACHNER, Johannes (FWI)

**Session Classification:** Session 2

Contribution ID: 67

Type: **not specified**

## **PITCH: Metal recovery by ion flotation using biomolecules**

*Wednesday 15 November 2023 15:42 (5 minutes)*

**Presenter:** Dr CHAKANKAR, Mital Vivek (FWG)

**Session Classification:** Session 2