

Diffraction STAP

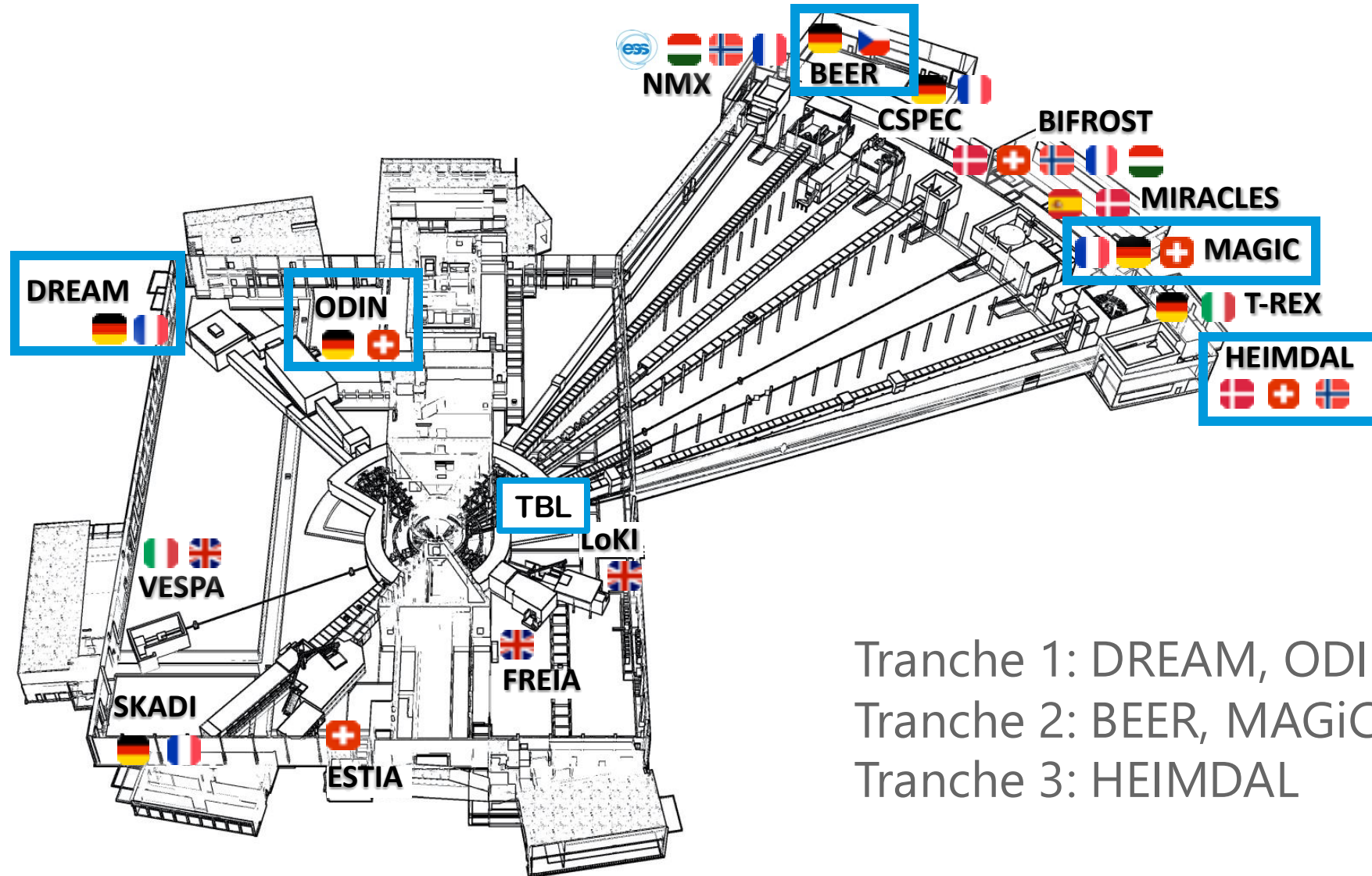
Mikhail Feygenson^{1,2,3}

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² Adjunct Associate Professor, Department of Materials Science and Engineering, Uppsala University

³ Jülich Center for Neutron Scattering, Forschungszentrum Jülich

Instruments



Tranche 1: DREAM, ODIN, TBL
Tranche 2: BEER, MAGIC
Tranche 3: HEIMDAL

Teams on site

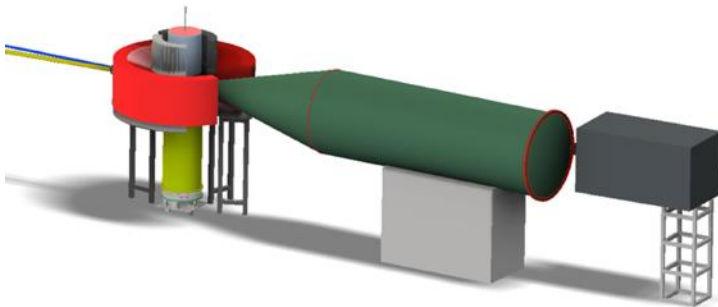
MAGiC

Denis Vasiukov
Moritz Braun (Eng)
1/3 Daniele Erbi (Des)



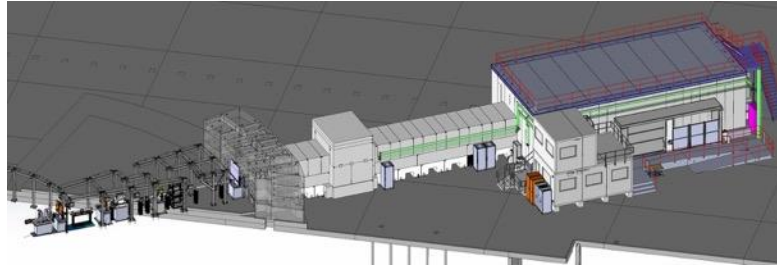
HEIMDAL

Dan Mannix
Siamak Kianzad (Eng)
Bengt Jönsson (Eng)



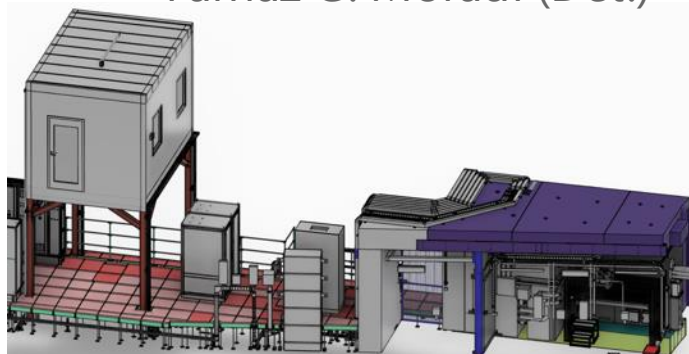
ODIN

Robin Woracek
Stefanos Athanasopoulos(postdoc)
Shuqi Xu (postdoc)



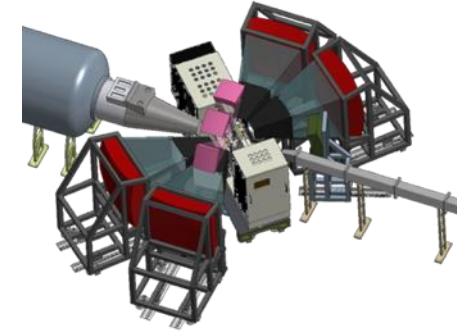
TBL

Thawatchart Chulapakorn
Zhanwen Ma (TBD)
Jason Morin (IOE)
Christofer Svensson (Eng)
Farnaz G. Moradi (Det.)



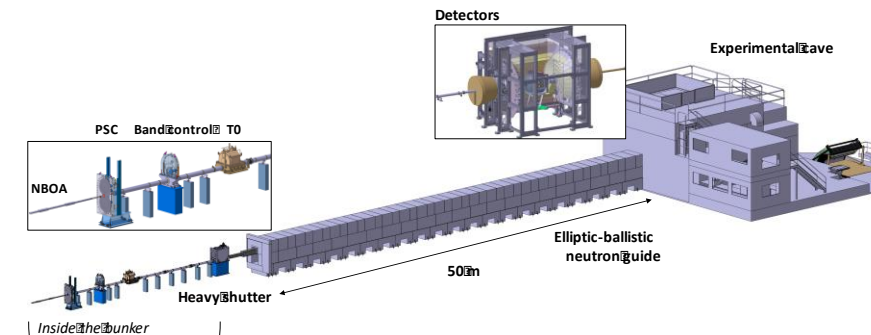
BEER

Premek Beran
Gergely Neméth
Caroline Curfs (SEE)
Grant Wallas (IOE)
Bojan Peric (Eng)



DREAM

Florence Porcher
Paulo Brant Carvalho
Anna Fornell (IOE)
1/3 Sylvain Desert (Eng)





First Science Activities

VR workshops

Support first science at DREAM & ODIN and experiments in > 2030



A DREAM come true – Sustainable and functional materials from local resources (Uppsala University)



1. Time-resolved structural evolution in metallic alloys during solidification and nonisothermal conditions
2. Nanoparticle formation in cellulose-based systems in humidity-controlled conditions
3. Separation, Purification and Reduction

Hyperspectral, multidimensional Imaging with Neutrons to explore material processes and processing for a sustainable society (Lund University)



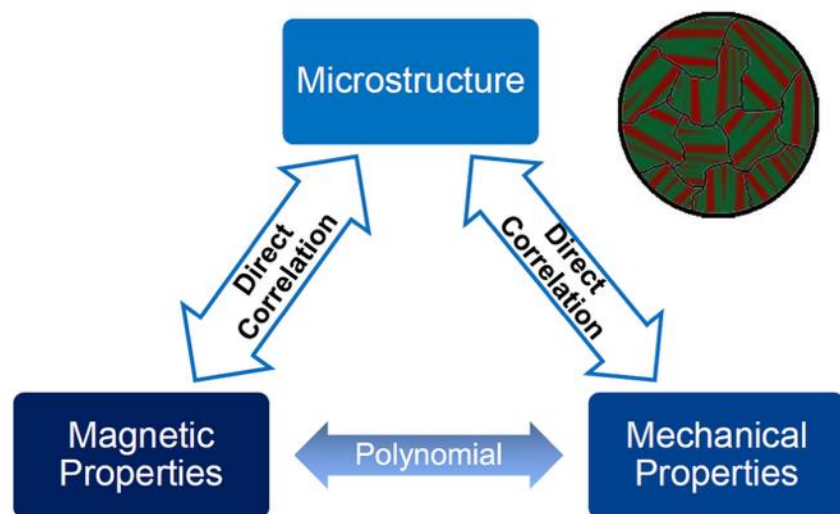
1. Crystalline Insights with hyperspectral Imaging
2. Decoding Materials and processes in 3D with ToF Tomography.
3. Pioneering ToF Imaging for new challenges and materials

ESS early science postdocs (Q2, 2026)



Two postdoc positions were awarded for imaging and diffraction

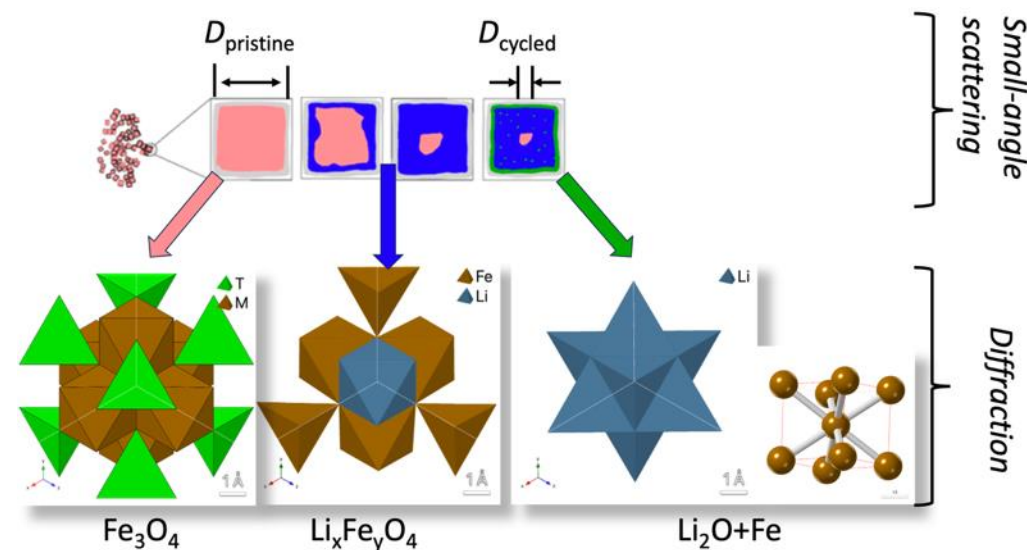
ODIN: Microstructural Characterization of Ferritic Alloys by Neutron Time-Of-flight and Grating Interferometry for Improved Materials



Collaborations: Lund University, Technical University of Munich, TBL team

Supervisor: R. Woracek (TBC)

DREAM: Correlation of Structural and Morphological Changes to Novel Electrode Materials for Li/Na-ion Batteries



Collaborations: Uppsala University, University of Duisburg-Essen

Supervisor: M. Feygenson

Ideas for new instruments under discussion in the Diffraction & Imaging division



- 1. Single-crystal diffractometer with high-pressure capabilities**
(ESS, PSI, ESS Bilbao, ISIS, Edinburgh University)
- 2. PDF dedicated diffractometer with $Q_{\text{MAX}} \sim 50 \text{ \AA}^{-1}$**
(PSI, ESS, TUM, ISIS, Duisburg-Essen University, Uppsala University)
- 3. MAGNI—Microscopy, Advanced and Grating Neutron Imaging-**
neutron imaging instrument optimized for high neutron flux
(PSI, DTU, ESS)
- 4. IDUN - Guide bundle instrument** for imaging, engineering
diffraction and SANS
(DTI, ESS)

Concluding remarks



- Division is growing, three more hires since last STAP
- IOE for HEIMDAL and MAGiC: shortlist
- Challenge of providing engineering support to the teams after TG5
- T2 & T3 instruments suffer from a lack of attention from technical support groups (T1 instruments, SAR/iSRR are the focus)
- Homework from the Imaging & Engineering Diffraction STAP: roleplay of bringing external SEE (quality, safety, delivery, acceptance and etc)
- Good progress towards first science for all teams
- DREAM rescoping: amendment of FWA, new quote, call-off procedure
- Next priority is HEIMDAL