

In-situ deformation experiments in transmitted light

Joyce Schmatz

Substructure Dynamics in Halite

In transmitted light?

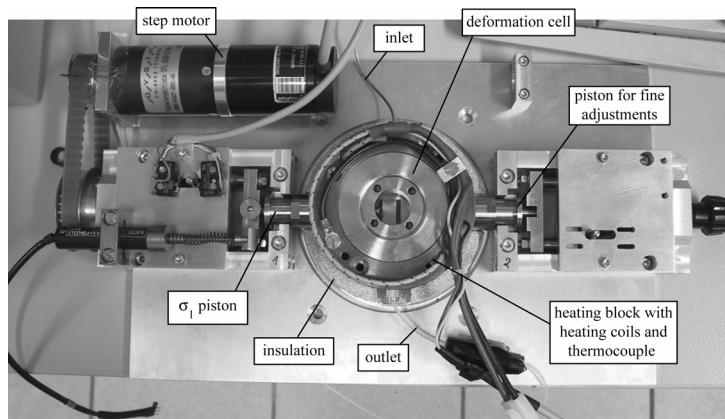
- High angle GB
- Fluid inclusions



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

In-situ deformation experiments in transmitted light



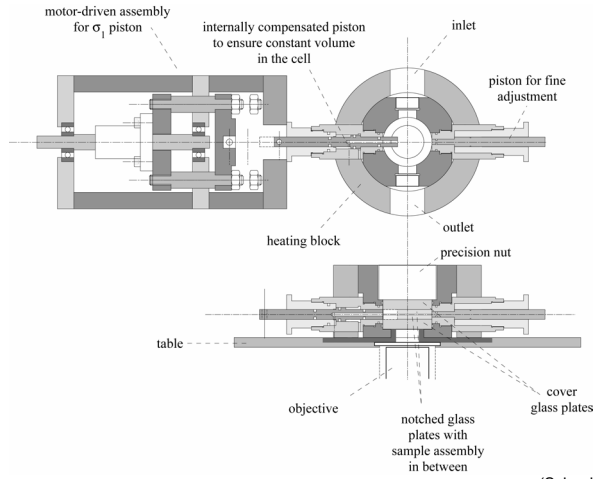
(Schenk, O. & Urai, J.L., 2005)



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

In-situ deformation apparatus: setup



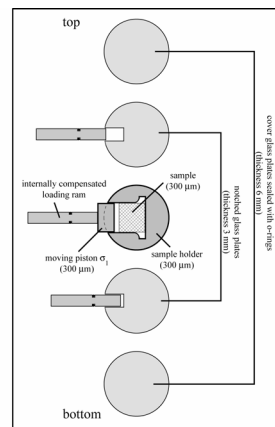
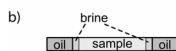
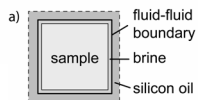
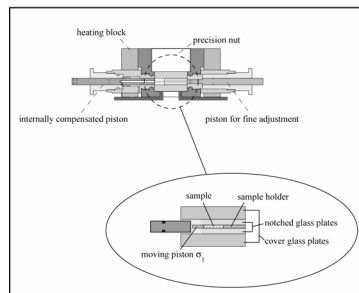
(Schenk, O. & Urai, J.L., 2005)



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

In-situ deformation apparatus : sample preparation



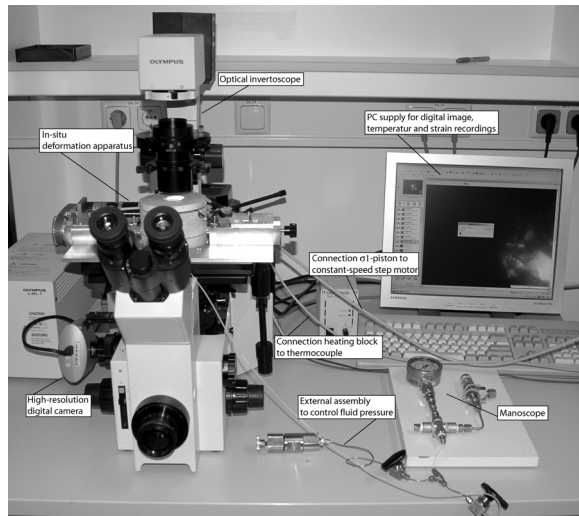
(Schenk, O. & Urai, J.L., 2005)



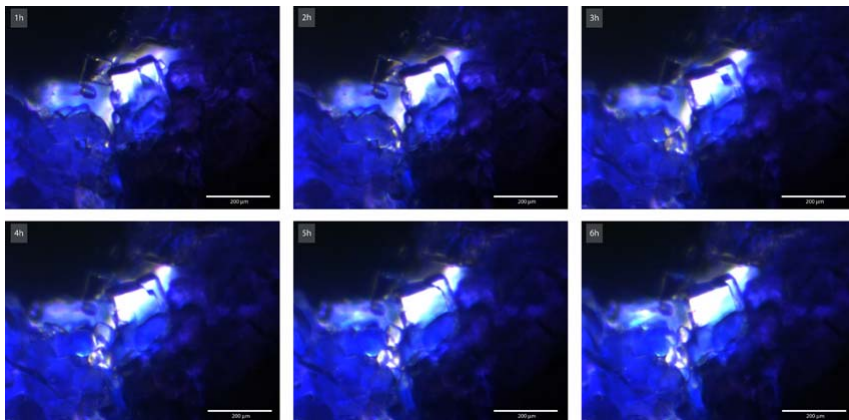
EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

In-situ deformation apparatus: setup

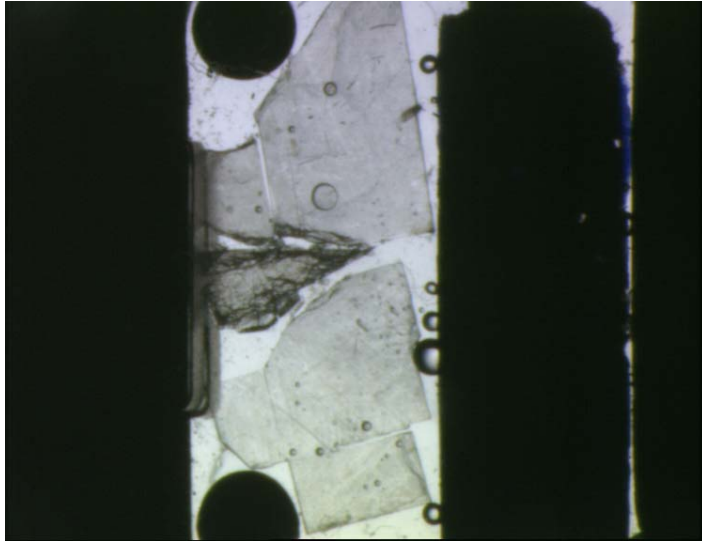


Naturally deformed, gamma-irradiated halite polycrystal



$T^{\circ}\text{C} = 85$

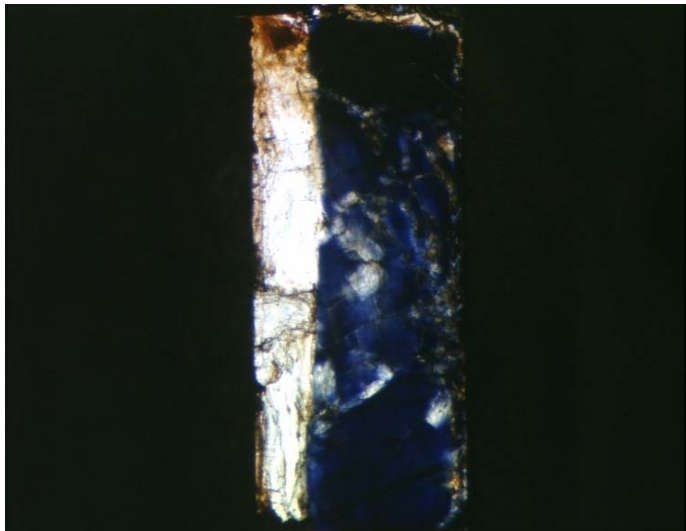
Setup GSH



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

Result GSH

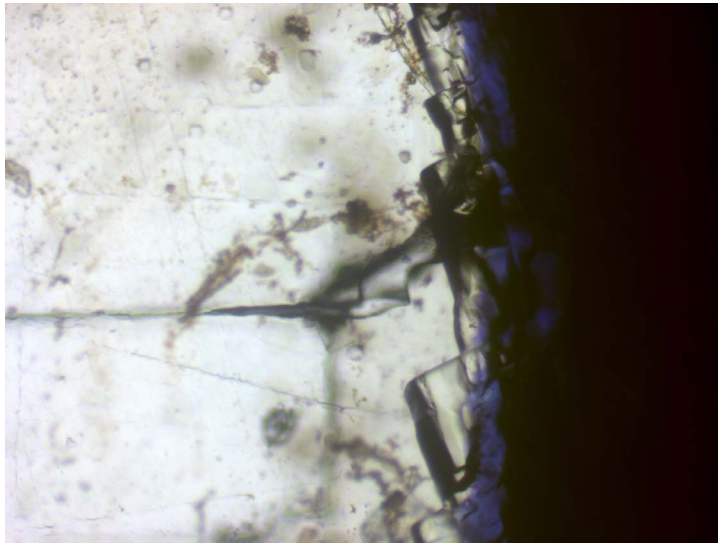


EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

T°C = 85

RWTHAACHEN

Results GSH



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

T°C = 85

RWTHAACHEN

Restrictions to GBM

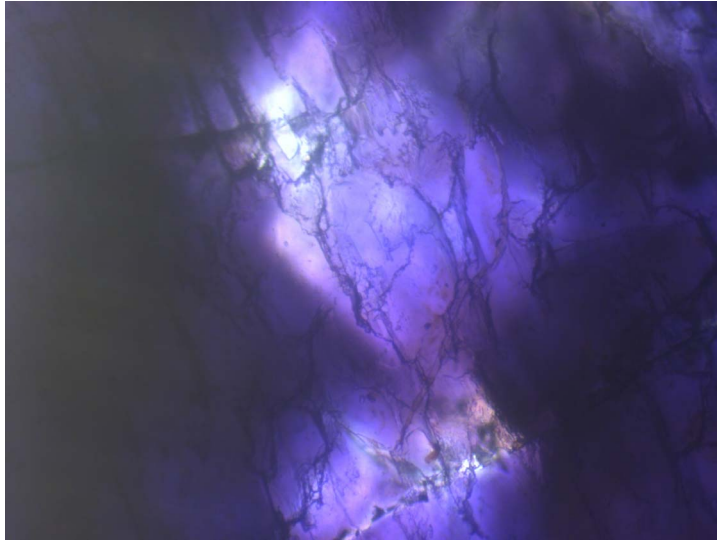
- Impurities in within the natural samples
- Wrong p, T-conditions
- Critical nucleation size



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

Grain Growth GSH

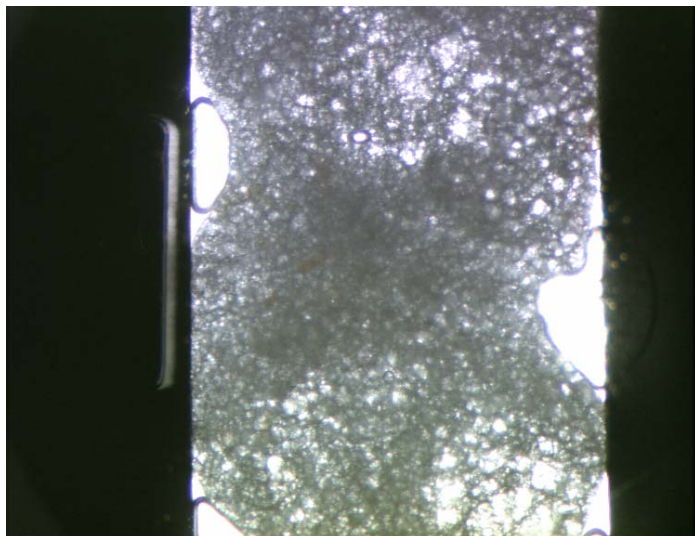


EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

T°C = 85

RWTHAACHEN

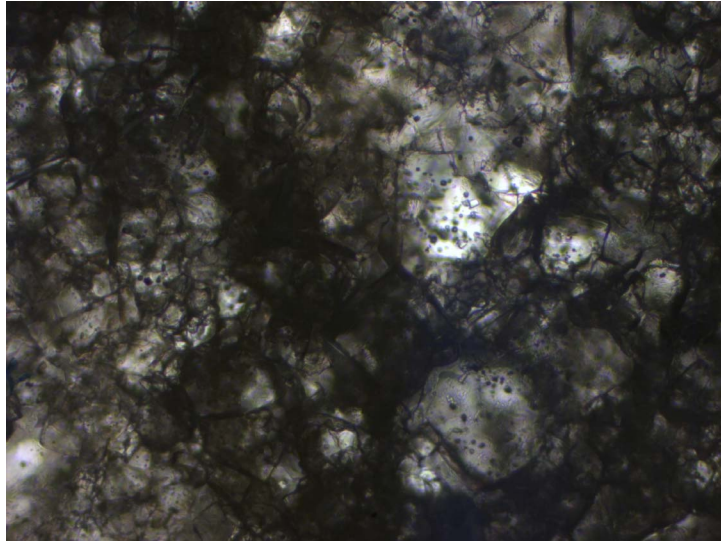
PH Setup



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

PH initial



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

T°C = 85

RWTHAACHEN

PH Results

SOME NICE MOVIES



EuroMinSci
A EUROCORES PROGRAMME
EUROPEAN SCIENCE FOUNDATION COLLABORATIVE RESEARCH

RWTHAACHEN

Outlook

- Quantify stress conditions
- Quantify material properties
- Use EBSD/SEM
- Reproduce
- Change boundary conditions (p,T)

- ELLE

