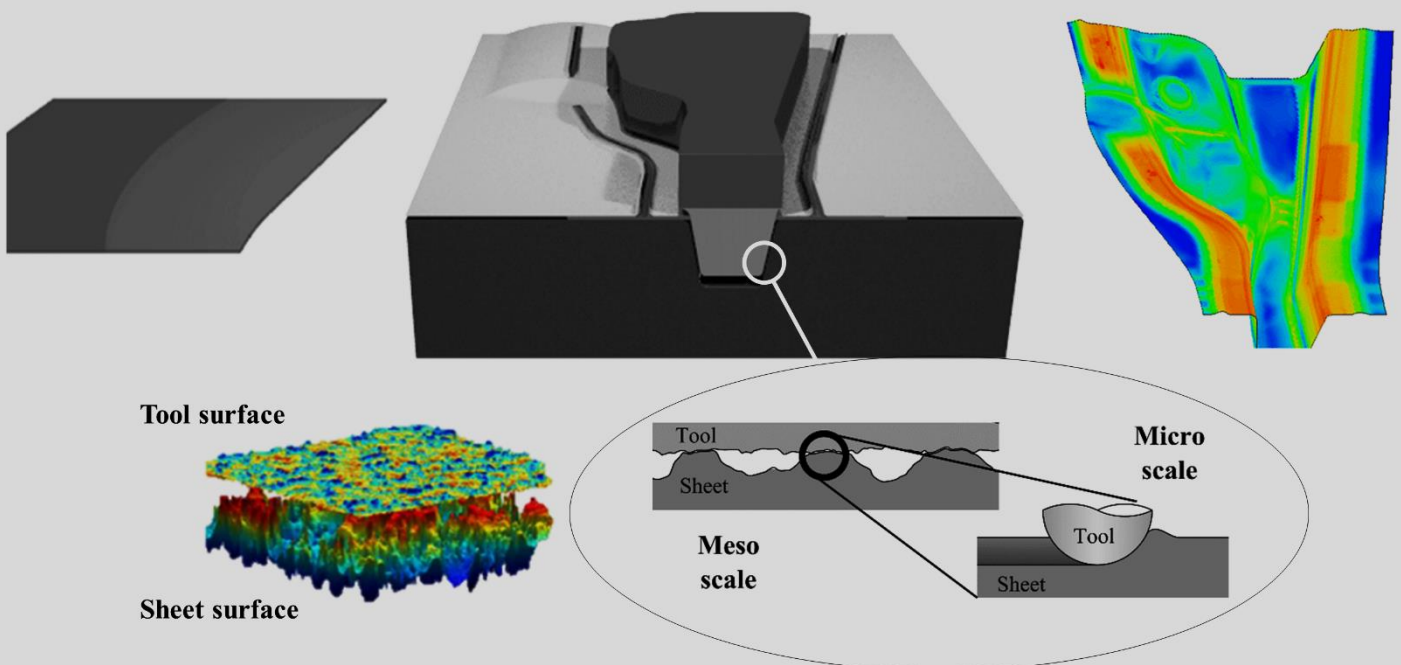


Invitation

Course on “Fundamentals of Tribology in Sheet Metal Forming”

Date: 18 & 19 February 2020

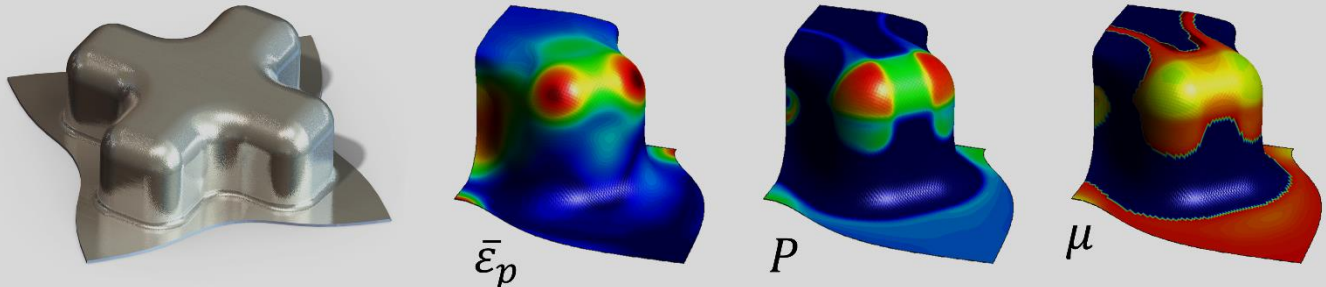
Location: UNIVERSITY OF TWENTE.



TOPICS:

- Fundamentals of tribology
- Introduction to tribology in sheet metal forming
 - Contact conditions, surface topology and friction in deep drawing processes; underlying friction mechanisms in deep drawing processes: adhesion, ploughing, lubrication regimes; classical friction tests.
 - Flattening due to normal loading and sliding; surface roughness evolution due to sub-surface (substrate) plastic deformation
 - Wear mode diagram; single asperity ploughing model; slip-line field theory
- Introduction to metal plasticity
 - Stress-strain behavior (including temperature effect); yield functions; strain hardening postulates; plastic flow rules; large deformations; forming limit diagrams
- Advanced friction models in sheet metal forming and implementation in FEM
 - Multi-scale friction model; evolution of friction during metal forming (position dependent);
 - Contact algorithms in FEM
 - FE implementation of advanced friction model (in full-scale simulations)
- Tribology Lab tour
- Workshop: Simulating cold stamping processes using the advanced friction model

“Fundamentals of Tribology in Sheet Metal Forming Processes”



Program, 18-02-2020

	Lecturers
8.00 Registration	
8.45 Introduction to the course	Dr. Javad Hazrati – University of Twente
9.00 Fundamentals of tribology	Prof. Em. Dr. Ir. Jean-Pierre Celis – KU Leuven
10.30 Break	
11.00 Tribology in sheet metal forming (1)	Dr.ir. Matthijn de Rooij – University of Twente
12.30 Lunch	
13.30 Tribology in sheet metal forming (2)	Dr.ir. Matthijn de Rooij – University of Twente
15.00 Break	
15.30 Introduction to metal plasticity	Prof.dr.ir. Ton van den Boogaard – University of Twente

Program, 19-02-2020

	Lecturers
8.30 Advanced friction models in sheet metal forming and implementation in FEM	Dr. Javad Hazrati – University of Twente
9.30 Break	
9.45 Advanced friction models in sheet metal forming and implementation in FEM	Dr. Javad Hazrati – University of Twente
11.00 Lab tour	Dr.ir. Matthijn de Rooij – University of Twente Dr. Javad Hazrati – University of Twente
12.30 Lunch	
13.00 Workshop: Simulating cold stamping process using the advanced friction model	Dr. Sabrina Gastebois – ESI Group Dr. ir. Anouar Krairi – Materials Innovation Institute (M2i)
15.30 End of course	

Registration

Target group:

MSc and PhD students, Researchers

Please register, free of charge, via [this link](#).