

The objective of this graduate school is to offer to young researchers a **specialized course** on the micromechanics of ductile fracture.

During the morning sessions organized in UCL (Louvain-la-Neuve), **lectures** given by experts in the field will cover the classical theory of ductile fracture as well as recent developments. State-of-the-art capabilities of the models will be illustrated through various applications.

Afternoon sessions will take place in specialized laboratories in different Belgian universities. Participants will travel by train in small groups and will participate to **experimental investigations** on ductile fracture. Upon registration, each participant should indicate his/her preferences by selecting 4 out of the 5 proposals of the next page.

At the end of each day, the return journey to Louvain-la-Neuve will be organized with much flexibility, leaving time for a short visit of the lab-hosting city.

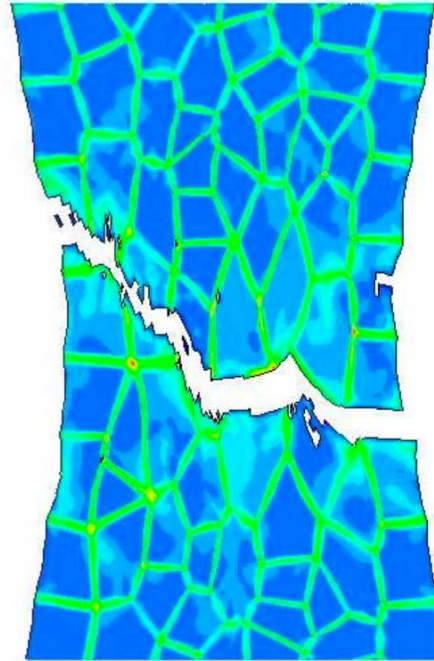
The number of participants is limited to 50.

Graduate School organizers:

Th. Pardoen and L. Delannay
Institute of Mechanics, Materials and Civil Engineering (<http://www.uclouvain.be/iMMC>).

Other teams of the IAP network:

P. Van Houtte (K.U.Leuven), D. Schryvers (U. Antwerp), J. Degrieck (U.Gent), A-M. Habraken (U. Liège), L. Rabet (RMA, Brussels), M. Gasperini (Paris XIII), E. van der Giessen (TU.Groeningen), J. Gil Sevillano (CEIT, San Sebastian)



Venue & Accommodation:

The UCL campus of Louvain-la-Neuve is located 30 km south of Brussels. It is easily reached from Brussels airport (35 km) or from Brussels-North railway station (40 min.):

<http://www.uclouvain.be/en-12730.html>

Recommended (most nearby) hotel:

<http://www.mercure.com/fr/hotel-2200-mercure-louvain-la-neuve-centre-de-seminaires/index.shtml>

Fee: 190 euros, including 3 lunch boxes, a rail-pass, and a hardcopy of the course notes. First come, first served, payment confirming the registration.

Registration and further information:

Catherine.Bauwens@uclouvain.be
(kindly include participant's name and affiliation.)

Graduate winter school on The micromechanics of ductile fracture

January 26-29 2010

UCL, Louvain-la-Neuve, Belgium



Photo : G. Focant © SPW

organized by the IAP-M3PHYS network:
Physics based multilevel mechanics of metals

Belgian Science Policy

Detailed planning

Tuesday, January 26th

09h00 Welcome

09h30 **Basics on ductile fracture in metals**
Pr André Pineau,
(Mines ParisTech, France)

11h30 **Void nucleation**
Dr Cihan Tekoglu
(UCL, Belgium)

12h45 Instructions about the lab sessions

14h30 Lab session 1

17h00 End of first day

Wednesday, January 27th

09h00 **Void growth and dilatant plasticity (I)**
Pr Jean-Baptiste Leblond
(Paris VI, France)

11h00 **Void growth and dilatant plasticity (II)**
Pr Jean-Baptiste Leblond
(Paris VI, France)

12h15 Instructions about the lab sessions

14h30 Lab session 2

17h00 End of second day

Thursday, January 28th

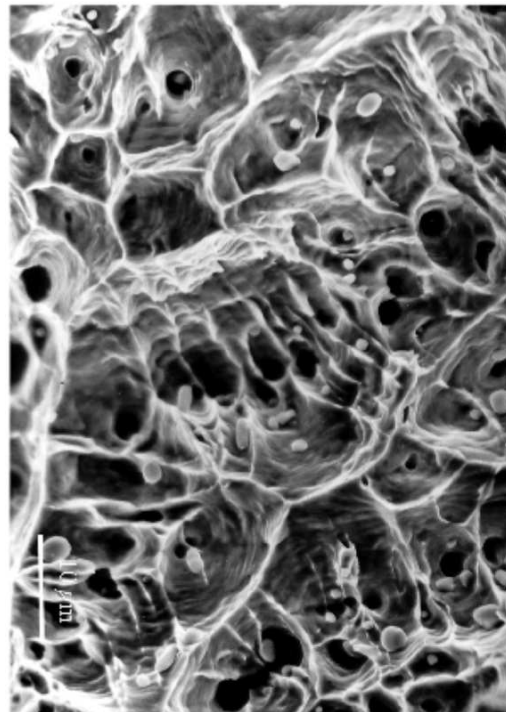
09h00 **Void coalescence**
Pr Thomas Pardoen
(UCL, Belgium)

11h00 **Link with fracture mechanics**
Pr Thomas Pardoen
(UCL, Belgium)

12h45 Instructions about the lab sessions

14h30 Lab session 3

17h00 End of third day



Friday, January 29th

09h00 **Integrated modelling of ductile fracture & cases studies (I)**
Pr Jacques Besson
(Mines ParisTech, France)

11h00 **Integrated modelling of ductile fracture & cases studies (II)**
Pr Jacques Besson
(Mines ParisTech, France)

12h45 End of the graduate school

Lab sessions

Lab1 : Dynamic mechanical testing
(U.Gent, Gent)

Lab2 : Multiaxial mechanical tests + Digital Image Correlation (ULg, Liège)

Lab3 : In-situ tensile testing in the TEM
(UA, Antwerpen)

Lab4 : Tensile tests on notched samples + Fracture surface analysis + In situ tensile test in SEM
(UCL, Louvain-la-Neuve)

Lab5 : Finite Element modelling of voided cells
(UCL, Louvain-la-Neuve)