

TRAINING COURSE ON POLYMER DURABILITY

**30 YEARS EXPERIENCE ON
DEGRADATION AND STABILIZATION
OF POLYMERS / BLENDS AND COMPOSITES**

**September 29th – 30st 2010
Aubière (Clermont-Ferrand), France**



Auvergne Volcanoes - CRDTA / Francis Cormon
www.auvergne-tourisme.info

organised by CNEP



in collaboration with
LPMM, Blaise Pascal University and ENSCCF



Ensemble Universitaire des Cezeaux
63174 Aubière Cedex (France)
(33) (0)4 73 40 53 00

Introduction

This course is the latest of a series of eleven given in French and English.

Purpose of the course

For more than 20 years, CNEP has been applying the concepts of photochemistry to rationalise the behaviour of polymer materials observed during their lifetime.

Its approach, based on the precise knowledge of the chemical mechanisms of both degradation and stabilization of most polymer families, is today largely accepted at the national and international level.

The unique association of a well known French research laboratory* developing fundamental research on polymer photoageing (LPMM)* and a research centre (CNEP)** connected with hundreds of companies working in all the fields of polymer applications*** has been generating a rich experience about the behaviour of polymer materials but also about their characterization in the solid state, in blend with various fillers and additives.

Next September 29th and 30th, CNEP organizes a two days meeting devoted to the concepts of polymer degradation**** and to the experimental techniques ensuring both the prediction of the long term behaviour of polymers and the assessment of their degradation.

* Laboratory of Molecular and Macromolecular Photochemistry
<http://www.univ-bpclermont.fr/LABOS/lpmm>

** National Centre for Evaluation of Photoprotection
<http://www.cnep-ubp.com>

*** Transport, energy, building, agriculture, sports&leisures, electronic ...

**** Including photo, thermal, gamma degradations and weathering

Program

1st DAY (WENESDAY SEPTEMBER 29)

- 9:00-9:10 OPENING
Prof. J. Lacoste
- 9:10-10:45 CONCEPTS OF POLYMER AGEING
Prof. J. Lemaire
- 10:45-12:00 ANALYTICAL METHODS FOR POLYMER AGEING AND FAILURES (introduction)
1. Spectrophotometric methods
Prof. J.-L Gardette

12:00-14:00 LUNCH

- 14:00-14:25 PHOTO/THERMAL DEGRADATION OF MAIN POLYMER FAMILIES (introduction)
1. Polyolefins
Prof. J. Lacoste
- 14:25-14:50 2. PVC
Prof. J.-L Gardette
- 14:50-15:15 4. Polycarbonate – Polyamides
Dr A. Rivaton
- 15:15-15:40 5. Elastomers
Dr D. Fromageot

15:40-16:10 BREAK

- 16:10-16:35 ANALYTICAL METHODS FOR POLYMER AGEING AND FAILURES
2. Yellowing/bleaching/gloss
Dr N. Siampirique
- 16:35-17:00 3. Chain scissions / Crosslinking
Prof. J. Lacoste

17:00-23:00 TOURISTIC TOUR & DINNER

2nd DAY (THURSDAY SEPTEMBER 30)

- 9:00-10:20 STABILISATION AND CONTROLLED DEGRADATION OF POLYMERS
Prof. J. Lemaire
- 10:20-10:45 FILLERS AND ADDITIVES vs POLYMER AGEING - *Prof. J. Lacoste*

10:45-11:00 BREAK

- 11:00-11:20 The case of nanoscale fillers/additives
Dr S. Thérias
- 11:20-11:45 Characterisation of stabilisers
Dr N. Siampiringue
- 11:45-12:45 AGEING METHODS AND PERSPECTIVES
Prof. J.-L Gardette - Dr N. Siampiringue
- 12:45-13:00 CLOSING REMARKS
- 13:00-14:30 LUNCH
- 14:30-17:00 CNEP VISIT and/or INDIVIDUAL INTERVIEWS WITH SPEAKERS

Who should attend ?

The following program is specially designed for young or experimented engineers involved in polymer degradation and more generally in polymer failures. Few PhD students can also be registered.

Teaching

The course language will be English. All lecturers have been asked to remember that English will not be the first language of many participants. The course will consist of formal lectures with questions and possible individual interviews with speakers. The course fee includes a support of lecture material.

Organisation

The course is organised by CNEP,
24 avenue des Landais, BP 30234
F 63174 AUBIERE Cedex
VAT FR48 341 151 728

*N° de déclaration d'activité de prestataire de formation 83 63 04003 63
(French attendants)

Contact : Prof. Jacques LACOSTE

Centre National d'Evaluation de Photoprotection
Phone : (33) (0)4 73 40 78 51
Fax : (33) (0)4 73 27 59 69
Mail : j.lacoste@cnep-ubp.com
<http://www.cnep-ubp.com>

Fees and registration

The fee for the course is 690 € inclusive of VAT at 19.6% till Sept. 1st 2009.
Extra surcharge of 120 € after Sept. 2nd 2009.

Included in registration fees : copy of proceeding, lunches and refreshments for both days and the tourist tour and dinner on Volcano of Lemptegy.
Not included hotel accommodation or other meals.
The fee must be paid before Sept. 15 2009.

A limited number of registrations will be available for PhD students at a reduced fee of 150 €

Payment may be made by :

- **Bank transfer**, net of all charges, to
Crédit Agricole Centre France

International Banking Account Number : IBAN

FR 76 16806051005101616800 052

BIC : AGRIFRPP868

- or **Bank cheque** at CNEP and addressed to **CNEP**
Service Comptabilite – B.P. 30234
F 63174 AUBIERE Cedex – France

List of hotels

(short list with tramway access to CNEP; stop "Margeride")

- *** Inter Hotel des Puys, 16 place Delille,
63000 Clermont-Ferrand, (33) (0)4 73 91 92 06
- *** Mercure Centre, 62 Bd François Mitterand,
63000 Clermont-Ferrand, (33) (0)4 73 34 46 46
- *** Holiday Inn Garden Court
59 Bd François Mitterand,
63000 Clermont-Ferrand - (33) (0)4 73 17 48 48
- ** Balladins (special rate for meeting),
18 bd Winston Churchill,
63000 Clermont-Ferrand, (33) (0)4 73 26 24 55
- ** Inter Hôtel République, 97 av de la République,
63000 Clermont-Ferrand - (33) (0)4 73 91 92 92

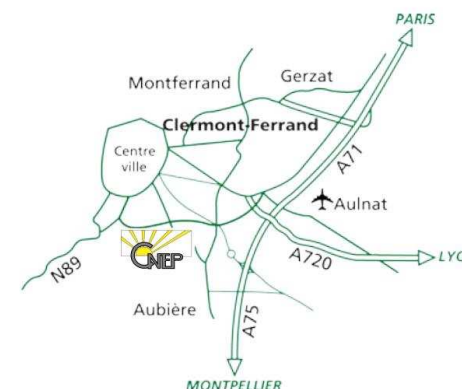
Others: <http://www.hotels-clermont.com>

Course location

Clermont-Ferrand (Aubiere) is a major French city with easy access from the rest of Europe by air, rail and road.

The course will take place at CNEP,
Ensemble Universitaire des Cezeaux
24 avenue des Landais, F 63174 Aubière
Phone : (33) (0)4 73 40 53 00
Fax : (33) (0)4 73 27 59 69

Maps :



See also :
<http://maps.google.fr/> (type CNEP)

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as possible to :

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CNEP
BP 30234
F 63174 Aubièrre cedex
Tel. (33) (0)4 73 40 78 51

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