

# Ultra-accelerated approach for the prediction of polymer material's outdoor durability

A key approach for the future

June 16<sup>th</sup> 2016

Aubiere (Clermont-Ferrand, France)



organised by



## Introduction

The prediction of the polymers' long term durability is both necessary for industry and almost impossible on a conceptual point of view. All the approaches proposed by professionals consist; (i) to expose samples in geographical sites where most weather parameters are controlled (irradiance, temperature, humidity, ...). In most cases several years are necessary even if some accelerated tests, by increasing irradiance by Fresnel mirrors, are sometimes possible; (ii) to expose samples in laboratory devices with the aim to simulate or to accelerate the photoageing. These instruments, by continuous exposure of samples (nights and days), allow currently to reduce the exposure time to 1 200 and 300 hours respectively, for a climate corresponding roughly at one year in the South of Europe at 45° south exposure.

Today, many industries are asking for higher acceleration factors, the main reasons being : (i) the time needed for the evaluation of a new material, a new color ; it is particularly the case in the car industry even if the acceptable lifetime is usually 8 to 10 years ; Agriculture, Construction /Public Works and many other industrial sectors are also concerned ; (ii) the necessity to ensure quality on very long exposure times (20-25 years) as it is the case in photovoltaic, eolian, sustained bridges ...

The aim of the meeting is to present various approaches of accelerated and ultra-accelerated photoageings with the necessary control of their natural ageing's relevancy, this being ensured by the physico chemical approach of the ageing according to NF ISO 10640\* (2011) largely developed by CNEP.

The meeting is organised by CNEP, ATLAS MTT and RENAULT, however a round table will allow other constructors of devices to participate actively.

\* *“Plastics: Methodology for assessing photoageing by FTIR and UV-visible spectroscopy”*

## Organisation

The meeting is held at CNEP, 25 avenue Blaise Pascal, CS 70234  
63178 Aubière cedex – FRANCE (*VAT number FR48 341 151 728*).

**Contact : Prof. Jacques LACOSTE**

Phone : (33) (0)4 73 40 78 51 - Fax : (33) (0)4 73 27 59 69

*NB. regular flights are available between Paris CDG or Orly and Clermont–Ferrand airports.*

## Program

- 9h OPENING
- 9h15-10h Introductory talk, Pr J. Lemaire (CNEP), Prediction of lifetimes of durable polymeric materials based on ultra-acceleration.
- 10h-11h The example of the car industry with the development of the new SEPAP MHE (Medium & High Energy) - E. Desnoux (RENAULT) and Dr. N. Siampiringue (CNEP).
- 11h-11h15 COFFEE BREAK***
- 11h15-12h High irradiance Xenon arc weathering - capabilities, utility and limitations - K. Scott (ATLAS MTT).
- 12h-14h LUNCH***
- 14h-14h30 Introduction of SEPAP MHE in Agriculture sector- G. Pichon (BARBIER).
- 14h30-15h Introduction of SEPAP MHE in Construction and Public Works sector – Dr. N.Siampiringue (CNEP).
- 15h-15h30 Accelerated Weathering of Polymeric Materials – New technologies driving faster more accurate results – S. Zimmerman (ATLAS MTT).
- 15h30-15h45 COFFEE BREAK***
- 15h45-16h30 Round table animated by all speakers and other devices providers.
- 16h30-17h CNEP visit or private interviews with speakers.

## Who should attend ?

The following program is specially designed for academic and industrial people involved in controlled degradation of polymeric materials. Few PhD students can also be registered.

## Speakers

The meeting will be held in English. All lecturers have been asked to remember that English is not the first language of many participants. The program will consist of formal lectures with questions and closed by a round table open to other device providers.

## Fees and registration

Registration fees for the meeting are 490 €.

Included in registration fees : documentation, lunch and refreshments.

A limited number of registrations will be available for PhD students at a reduced fee of 200€.

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	AGRI FRPP868

- or Bank cheque to CNEP and addressed to CNEP.

## List of hotels

(short list of hotels in Clermont-Ferrand with tramway access to CNEP stop "Margeride")

- \*\* **Balladins** 18 bd Winston Churchill, (33) (0)4 73 26 24 55
- \*\*\* **Inter Hotel des Puys**, 16 place Delille, (33) (0)4 73 91 92 06
- \*\*\* **OCEANIA (ex-Mercure)**, 82 Bd François Mitterand, (33) (0)4 73 29 59 59
- \*\*\* **Holiday Inn Garden Court** 59 Bd François Mitterand, (33) (0)4 73 17 48 48
- \*\* **Inter Hôtel République**, 97 av de la République, (33) (0)4 73 91 92 92

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

CNEP GPS : : N 45° 45' 40.2624" – E 3° 7' 7.395"( 45.761184 ; 3.118721)

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**June 16<sup>th</sup> 2016**

**REGISTRATION FORM**

Please send by e-mail, fax or post mail to :

[h.babarit@cnep-ubp.com](mailto:h.babarit@cnep-ubp.com)

Phone (33) (0)4 73 40 53 00

Fax. (33) (0) 4 73 27 59 69

**CNEP**

25 avenue blaise Pascal - CS 70234

F 63178 Aubière cedex - FRANCE

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**Name :**

**Job title :**

**Company /Organisation :**

**Mailing address :**

**City :**

**Post code :**

**Country :**

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**Phone:**

**E-mail :**

*I enclose :*

*a copy of the bank transfer for CNEP*

*or a cheque payable to CNEP*