International Symposium on

**GLASS DEGRADATION IN ATMOSPHERIC CONDITIONS**

Bringing together specialists of Glass from Cultural Heritage, Industry and Science

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15, 16 et 17th November 2017

C2RMF, amphithéâtre Palissy
Palais du Louvre – Porte des Lions
14, quai François Mitterrand
75001 PARIS

Further information on:
https://glassatm.chimie-paristech.fr
International Symposium on
Glass Degradation in Atmospheric Conditions

DAY 1- 15th November 2017

THEME 1- MECHANISMS OF GLASS ALTERATION IN ATMOSPHERE

Cultural Heritage Glasses
9h00-9h30 Welcome and opening
9h30-9h45 Introduction
Michel Menu, Didier Gourier, et Isabelle Biron
9h45-10h20 Alteration mechanisms of ancient glass objects exposed in atmosphere
Fanny Alloteau, Isabelle Biron, Odile Majérus, Patrice Lehuédé, Daniel Caurant, Thibault Charpentier
10h20-10h55 Outdoor weathering and laboratory experiments-conclusions for preventive conservation
Hannelore Roemich, Katrin Wittstadt, Gabriele Maas-Diegele
10h55-11h25 Break
11h25-12h00 Studies on potash-lime-silica glass with medieval composition and their preservation by applying sol-gel silica coating
Manfred Schreiner, Monica de Bardi, Renzo Bertoncello
12h00-12h35 Glass deterioration in the Museum environment: a case study in Lisbon Portugal
Alexandra Rodrigues, Sarah Fearn, Marcia Vilarigues
12h35-13h10 Early stages of environmental glass alteration in the Atlantic coast of the Iberian Peninsula
Teresa Palomar, Daniel de la Fuente, Manuel Morcillo and Marcia Vilarigues
13h10-13h40 Lunch
13h40-14h15 Study of the passivating effect of ancient stained glass altered layer using oxygen and hydrogen isotopes
Loryelle Sessegolo et Aurélie Verney-Carron
14h15-14h50 Surface and sub-surface precipitation influence on the weathering of low-durability medieval stained glass
Lucile Gentaz, Tiziana Lombardo, Claudine Loisel
14h50-15h25 The browning phenomenon of medieval stained glass windows
Stéphanie Rossano, Claudine Loisel, Jessica Ferrand, Elisabeth Venault de Bourleuf, Nicolas Trcera, Volodymir Khomenko, Ali Bedidi, Chloë Fourdrin, Fanny Bauchau, Alexandre François, Faisl Bousta, Isabelle Pallot-Frossard
15h25-15h55 Break

Industrial and Nuclear Glasses
15h55-16h35 Ancient glass and modern glass: long and short term glass weathering
Marco Verità
16h35-17h15 Glass corrosion and nuclear waste disposal using the study of ancient glass to evaluate long term effects
Joe Ryan
17h15-17h55 Review of vapor phase hydration of nuclear glasses
Sathya Narayanasamy, Patrick Jollivet, Nicole Godon, Frédéric Angeli, Xavier Crozes, Abdesselam Abdelouas
Day 2- 16th November 2017

**Theme 1 - Mechanisms of Glass Alteration in Atmosphere**

**Industrial and Nuclear Glasses (suite)**

9h15-9h55  A review of industrial glass weathering in atmospheric conditions  
Sophie Papin, Patrice Lehuédé

9h55-10h35  Long term observation (6 years) of glass enamels in outdoor exposure and two years of weathering and cleaning of float glass  
Edda Rädlein

10h35-11h05  Break

**Theme 2 – Solutions for the Conservation of Glass Exposed in Atmosphere**

**Cultural Heritage Glasses**

11h05-11h40  Museography and conservation of the collection of chemically unstable painted enamels from Limoges in Louvre Museum  
Françoise Barbe

11h40-12h15  The collection of ancient altered glass objects of the Decorative Arts Museum, Paris  
Jean-Luc Olivié

12h15-12h50  Conservation and restoration of stained-glass windows in historical monuments of Paris  
Jessica Degain

12h50-14h00  Lunch

14h00-14h35  IN GLASS, although  
Martine Bailly

14h35-15h10  Research applied to the conservation-restoration of stained-glass windows  
Claudine Loisel, Barbara Trichereau

15h10-15h45  Investigation into the effects of conservation treatments on degrading Limoges enamels at the Rijksmuseum  
Chiara Gamarra, Joosje van Bennekom, Sara Creange, Guus Verhaar

15h45-16h15  Break

16h15-16h50  Identification of glass objects susceptible to crizzling—is it possible?  
Jerzy Kunicki-Goldfinger

16h50-17h25  Early detection of glass deterioration in museum collections  
Guus Verhaar, Maarten R. van Bommel, Norman H. Tennent

17h25-17h55  Atmospheric conditions that promote or inhibit crizzling in glass objects  
Stefan Koob
DAY 3- 17th November 2017

Theme 2 - Solutions for the Conservation of Glass Exposed in Atmosphere

Cultural Heritage Glasses (suite)

9h15-9h50  Research project on the consolidant for crizzling enamels and glass (hybrid polymer ORMOCER OR-G50 + OR-B30)
Rainer Richter

9h50-10h25  Crizzling - exploring degradation by simulation on model glasses
Katrin Wittstadt, Gabriele Maas-Diegele, Werner Hiller-König

10h25-10h55  Break

Industrial and Nuclear Glasses

10h55-11h30  Study of a surface treatment based on zinc salts to protect glasses from atmospheric alteration. Mechanisms and application to ancient glass objects in museums
Fanny Alloteau, Isabelle Biron, Odile Majerus, Patrice Lehuédé, Daniel Caurant, Antoine Seyeux

11h30-12h05  Protection of Glassware in the Automatic Dishwashing Process - A Detergent Manufacturer’s Insights and Experiences
Karlheinz Hahn

12h05-12h35  Effect of zinc as a beneficial component in glass cleaning
Edda Rädlein

12h35-13h00  Conclusion and closure

Further Information

Amphithéatre Bernard Palissy
C2RMF
Palais du Louvre-Porte des Lions
14, quai François Mitterrand
75001 Paris- FRANCE
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How to come?

Metro: Palais-Royal–Musée du Louvre station (line 1).
Bus: the following bus lines stop in front of the Pyramid: 21, 24, 27, 39, 48, 68, 69, 72, 81, 95, and the Paris Open Tour bus.
Car: an underground parking garage is available for those coming by car. The entrance is located on avenue du Général Lemonnier. It is open daily from 7 a.m. to 11 p.m.
Batobus: get off at the Louvre stop, quai François Mitterrand.
Vélib’ stations (bicycle sharing system):
No. 1015: 2 place A. Malraux
No. 1023: 165 rue Saint-Honoré
No. 1014: 5 rue de l’Echelle
No. 1013: 186 rue Saint-Honoré

From Orly Airport: take the RER C train, direction Champs de Mars-Tour Eiffel, and get off at Saint-Michel-Notre-Dame. Walk to the place Saint-Michel and take bus no. 27, direction Saint-Lazare. Get off at the Louvre, in front of the Pyramid.

From Charles de Gaulle Airport: take the RER B train, direction Massy-Palaiseau, and change at Châtelet-les-Halles to line 14, direction Saint-Lazare. Get off at Pyramides station and walk to the Louvre from there (3 minutes). Alternatively, take Metro line 1 at Châtelet-les-Halles, and get off at Palais-Royal–Musée du Louvre.