



**Gesellschaft für
Umweltsimulation e.V.**

Program

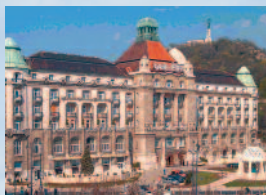
4th European Weathering Symposium EWS

(XXVIth Colloquium of Danubian
Countries on Natural and Artificial
Ageing of Polymers)

September 16th -18th, 2009
Budapest, Hungary



Confederation
of European
Environmental
Engineering
Societies



4rd European Weathering Symposium EWS

(XXVIth Colloquium of Danubian Countries on Natural and Artificial Ageing of Polymers)

We are pleased to invite you to participate in the 4th European Weathering Symposium EWS to be held in Budapest, Hungary, on September 16th to 18th, 2009.

Launched in 1967 by four relevant institutes from Austria, Czechoslovakia, Hungary, and Yugoslavia, the Colloquia of Danubian Countries have been the only independent meeting - now on a European scale - in the field of natural and artificial weathering of polymers for 40 years. In the tradition of these colloquia the EWS is a meeting point allowing experts from industry and academia to learn from each other.

Key topics in 2009 are:

- **New Procedures**
- **Analytical Methods**
- **Weathering of Plastics and Coatings**
- **Influences of Climatic Quantities**
- **Correlation Field / Laboratory**
- **Stabilization and Special Influences**

Before the opening of the conference, a half day training course is being offered: Effects of Moisture in the Course of Weathering. Please register for this course using the registration form.

Schedule

September 16th, 2009

- | | |
|-------------------|-------------------|
| 13.00 h – 17.30 h | Training Course |
| 19.00 h – 21.00 h | Welcome Reception |

September 17th, 2009

- | | |
|-------------------|-------------------------|
| 08.00 h – 09.00 h | Registration |
| 09.00 h – 17.15 h | Conference Day 1 |
| 17.30 h – 19.30 h | Boat Tour on the Danube |
| 20.00 h – 23.00 h | Conference Dinner |

September 18th, 2009

- | | |
|-------------------|---|
| 09.00 h – 15.15 h | Conference Day 2 |
| 15.15 h | Closing of the Conference |
| 15.30 h | Technical Tour to the Laboratory of Plastics and Rubber Technology, Budapest University |

General Information

Language	Conference language will be English.
Program	The program with abstracts is available on: http://www.weathering-symposium.org
Scientific Committee	Peter Trubiroha (Chairman), Berlin, D Domenico Acierno, DIMP-UniNa, Naples, I Norman Billingham, University of Sussex, Brighton, GB Olga Guseva, EMPA, Dübendorf, CH Ali Harlin, VTT, Espoo, FIN Ignacy Jakubowicz, SP, Boras, S Erika Kalman, CRC-HAS, Budapest, H Leopold Kranner, ÖGUS, Vienna, A Jonathan Martin, NIST, Gaithersburg, USA Regina Nogueira, IBB, Minho, P Krzysztof Pielichowski, University of Technology, Krakow, PL Jan Pospisil, IMC, Prague, CZ Vesna Rek, University of Zagreb, HR Lyda Rychla, PI-SAS, Bratislava, SK Jacques Sampers, DSM Research, Geleen, NL Yoshimitsu Takane, JWTC, Choshi City, J Jacques Verdu, ENSAM, Paris, F
Chairman	Thomas Reichert, Fraunhofer ICT, Pfinztal, Germany
Organisation/ Conference Management	The European Weathering Symposium is being organised on behalf of the Confederation of European Environmental Engineering Societies (CEEES) by the German Society for Environmental Engineering GUS (Gesellschaft für Umweltsimulation e.V.).
Participation Fee	The participation fee is € 390,-- before May 15 th , 2009; after May 15 th , 2009 € 490,--. This fee includes lunches and refreshments, welcome reception on September 16 th , sightseeing tour and conference dinner on September 17 th , technical tour on September 18 th and proceedings.
Cancellation	If written cancellation is received before August, 15 th , 2009 a refund will be given less € 100,-- administration charge. No refunds can be provided for registration cancelled after this date.

General Information

Registration

Please mail the attached registration form to

Gesellschaft für Umweltsimulation e.V.
Sonja Holatka
P. O. Box 12 40
D-76318 Pfinztal,
Germany
Phone: +49-721-4640-391
Fax: +49-721-4640-345
sonja.holatka@gus-ev.de
www.gus-ev.de

or register online at
<http://www.weathering-symposium.org>

Registration fee must be paid on receipt of the invoice or in cash on arrival at venue. Credit cards are not accepted.

Conference Venue

The symposium will be held at:
Danubius Hotel Gellért, Szent Gellért ter 1,
Budapest

Accommodation

GUS has reserved contingents of different types of rooms at Danubius Hotel Gellért at special convention rates until August 3rd, 2009.

Please indicate your room reservation on the attached Hotel Accommodation Booking Form and send it to Danubius Hotel Gellért before August 3rd, 2009.

Deadlines

Early registration
May 15th, 2009

Hotel room reservation:
August 3rd, 2009

Pre-Meeting Program
Wednesday, September 16th, 2009

Training Course

13.00 – 17.30 h

Effects of Moisture in the Course of Weathering

A. Geburtig, V. Wachtendorf, BAM, Berlin, D

Moisture Conditions in Natural and Artificial Weathering

- Thermal Radiation and Surfaces
- Microclimate (U-t-a Diagram)
- Conditions in Natural and Outdoor Weathering

Physical Effects of Moisture

- Mechanical Stress
- Wetting Cycles
- Tg : Moisture as a Plasticizer

Chemical Effects of Moisture

- Hydrolysis
- Photocatalytic Effects
- Microbiological Attack

Influence on Photodegradation and Measurement Results

- Seasonal Variations
- Time Scales of Humidity Conditioning

19.00 – 21.00 h

Welcome Reception

Danubius Hotel Gellért, Szent Gellért ter 1,
Budapest

Conference Program

Thursday, September 17th, 2009

09.00 h

Opening of the Conference

T. Reichert, GUS e.V. and Fraunhofer ICT, Pfinztal, D

Greetings

B. Pukánszky, Budapest University of Technology and Economics, Budapest, H

Session 1

New Procedures

Chairperson: A. Riedl, ATLAS Material Testing Technology GmbH, Linsengericht-Altenhaßlau, D

09.15 h

V 1

Ultra Accelerated Weathering System I: Design and Functional Considerations

H. K. Hardcastle, ATLAS Material Testing Technology LLC, Chicago, USA

G. J. Jorgensen, C. E. Bingham, National Renewable Energy Laboratory, Golden, USA

09.40 h

V 2

Predicting the In-Service Performance Using the NIST Sphere

C. C. White, D. Hunston, K. T. Tan, National Institute of Standards and Technology, Building and Fire Research Laboratory, Gaithersburg, USA

10.05 h

V 3

Surface Temperatures of Colour Painted Samples in Natural and Artificial Weathering with Different Laboratory Light Sources for Optimized Testing and Investigations

A. Schönlein, O. Haillant, ATLAS Material Testing Technology GmbH, Linsengericht-Altenhaßlau, D

S. Senff, KHS Technical Lighting, Mörfelden, D

10.30 h

Coffee Break

Session 2

Analytical Methods

Chairperson: V. Wachtendorf, BAM, Berlin, D

11.00 h

V 4

Measurement of Action Spectra in Case of Non-Linearity between Radiant Exposure and Photochemical Reaction Example: Production of Free Radicals in Human Skin when Exposed to UV and VIS Radiation

L. Zastrow, L. Ferrero, Coty/Lancaster SAM, International R&D Center, Monaco, MC

N. Groth, F. Klein, Privatinstitut Galenus GmbH, Berlin, D

D. Kockott, UV-Technik, Hanau, D

J. Lademann, Charité Universitätsmedizin, Department of Dermatology, Center of Experimental and Applied Cutaneous Physiology, Berlin, D

Conference Program

Thursday, September 17th, 2009

11.25 h V 5

A New Facility for Ageing Materials with Spectrally Resolved UV Radiation

A. Heikkilä, Finnish Meteorological Institute, Helsinki, FIN

P. Kärhä, K. Ruokolainen, Helsinki University of Technology, Espoo, FIN

J. Juhola, M. Kaunismaa, T. Ture, Elastopoli Oy, Vammala, FIN

11.50 h V 6

Inhomogeneity of Photodegradation Processes in Bulk Commodity Polymers Subjected to Accelerated Weathering Studied by ESRI and other Physical Methods

J. Pilar, J. Pflieger, M. Trchová, D. Michálková,

J. Pospíšil, Institute of Macromolecular Chemistry, Prague, CZ

12.15 h

Lunch

Session 3

Poster Presentations

13.15 h P 24

The Weathering Effect in the Application of Environmental Interactive Materials on Tensile Fabric Coatings

J. Neves, M. Neves, University of Minho, Guimaraes, P

P 25

A Quantitative Model for the Prediction of Gloss Retention, Color Change, and Chalking for Poly(vinylidene Fluoride)acrylic Blends

K. Wood, Arkema Inc., King of Prussia, USA

P 26

Weathering Resistance of the Flame Retardancy of Polymeric Materials

V. Wachtendorf, A. Geburtig, U. Braun,

B. Schartel, BAM, Berlin, D

P 27

Crystallinity Anomalies of PA 6 in Weathering at Simulated Paper Machine Conditions

T. Hakala, Tampere University of Technology, Tampere, FIN

A. Harlin, VTT, Technical Research Centre of Finland, Espoo, FIN

P 28

Influence of Weathering Processes on Adhesive Properties of Plasma-Modified SBS

S. M. Kuberski, A. Bomba-Stolarek, Technical University of Lodz, Lodz, PL

Conference Program

Thursday, September 17th, 2009

- P 29** **New Analytical Developments for Elastomers Weathering**
F. Delor-Jestin, J. Lacoste, ENSCCF, University Blaise Pascal, Auubière, F
- P 30** **Study of Hydrothermal Ageing of Poly(vinyl-chloride/olive Pomace Composite**
H. Djidjelli, A. Boukerrou, N. Maouche, University A. Mira, Bejaia, DZ
- P 31** **Temperature Dependence of Oxidative Thermal Degradation of Elastomer**
M. Ito, Waseda University, Tokyo, J
- P 32** **Long-Term Stability of Elastomeric Preformed Joint Seals**
T. Boettger, H. Bolte, University of Leipzig, D
- P 33** **Ageing of Rubber Compounds Containing Vegetable Oils**
K. Nicinski, J. Mezynski, M. Tulik, Institute for Engineering of Polymer Materials & Dyes, PL
- P 34** **Determination of Tensile Impact Strength of Plastic Flue Liners of Chimneys after the Exposure with Laboratory Light Sources**
D. Hohenwarter, H. Dragaun, FIT, Wien, A
- P 35** **Virtual Product Qualification for Sustainability**
T. Reichert et al., Fraunhofer ICT, Pfinztal, D
- P 36** **Analysis of the Efficiency of Additive Packages in the Stability of Polyethylene Pipes**
D. Tátraaljai, M. Vámos, I. Kriston, J. Kovács, E. Földes, Chemical Research Center and Budapest University, Budapest, H
P. Staniek, Clariant Produkte (Schweiz) AG, Muttenz, CH

Session 4

Polymer Weathering I

Chairperson: L. Kranner, Knorr-Bremse AG, Mödling, A

14.15 h

V 7

Photo- and Thermo-Oxidation Ageing of Polyethylenes Sheats for Cable Stayed Bridge Applications

J. Tireau, L. Van Schoors, K. Benzarti, LCPC, Paris, F
X. Colin, LIM (UMR CNRS 8006), Arts et Métiers Paris Tech, Paris, F

Conference Program

Thursday, September 17th, 2009

14.40 h **V 8**

Ageing Characterization of Commercial Ethylene Copolymer Greenhouse Films by Analytical and Mechanical Methods

G. Oreski, Polym. Competence Center Leoben GmbH, Leoben, A

G. M. Wallner, University of Leoben, Leoben, A

15.05 h **V 9**

Load Evaluation of PV-Modules for Outdoor Weathering under Extreme Climatic Conditions

M. Koehl, C. Ferrara, M. Heck, Fraunhofer ISE, Freiburg, D

15.30 h

Coffee Break

Session 5

Polymer Weathering II

Chairperson: P. Trubiroha, GUS e.V., D

16.00 h **V 10**

Pyelolefin-Claay Nanocomposites: Processing, Ageing, Degradation and Analytical Methodologies

S. Al-Malaika, H. H. Sheena, PPP Research Unit, Aston University, Birmingham, England, GB

16.25 h **V 11**

Study of Ageing Process of Poly(vinyl chloride)monmorillonite Nanocomposites

J. Pagacz, K. Pielichowski, Cracow University of Technology, Cracow, PL

S. Kuberski, Technical University of Lodz, Lodz, PL

16.50 h **V 12**

Degradation and Nanoparticle Release of Polymer Nanocomposites Exposed to UV

T. Nguyen, B. Pellegrin, C. Mermet, X. Gu, A. Shapiro, J. Chin, NIST, National Institute of Standards and Technology, Gaithersburg, USA

17.30 h - 19.30 h

Boat tour on the Danube

Start at Danubius Hotel Gellért

20.00 h - 23.00 h

Dinner Menu

Danubius Hotel Gellért

Conference Program
Friday, September 18th, 2009

Session 6

09.00 h **V 13**

Influences of Climatic Quantities

Chairperson: J. Pilar, Institute of Macromolecular Chemistry, Prague, CZ

Factors and Material Consequences in Polymer Weathering

J. Pospíšil, J. Pilar, S. Nešpurek, Institute of Macromolecular Chemistry, Prague, CZ

09.25 h **V 14**

Systematic Evaluation of Different Stress Factors onto the Degradation Behaviour of Plastics

K.-A. Weiß, T. Kaltenbach, M. Köhl, Fraunhofer ISE, Freiburg, D

A. Lichtblau, M. Zäh, Clariant Produkte (Deutschland) GmbH, Gersthofen, D

09.50 h **V 15**

Understanding, Optimizing, & Measuring Water in Xenon-Arc Accelerated Weathering for Automotive Exterior Coatings

M. Nichols, T. Misovski, Ford Research & Advanced Engineering; Dearborn, USA

K. Henderson, D. Smith, Bayer MaterialScience. Pittsburgh, USA

J. Boisseau, L. Pattison, BASF Corp., Southfield, USA

J. Quill, Q-Lab. Corp., Cleveland, Ohio, USA

10.15 h **V 16**

Ageing of PVC for Outdoor Applications: Role of Water and Inorganic Fillers

L. E. Pimentel Real, A. M. Ferraria, A. M. Botelho do Rego, Lisboa, P

10.40 h

Coffee Break

Session 7

Correlation Field / Laboratory

Chairperson: M. Köhl, Fraunhofer ISE, Freiburg, D

11.10 h **V 17**

Climatic and Artificial Weathering Effects on Various Products

E. Pohle, L. Kranner, Ofi, Vienna, A

11.35 h **V 18**

Artificial and Natural Weathering of Transparent Engineering Resins

M. C. Grob, CIBA Inc., Industry Platform Plastics, Basel, CH

12.00 h **V 19**

Natural and Artificial Weathering of Polyethylene Composites

R. Yang, W. Li, Y. Liu, J. Yu, K. Wang, Tsinghua University, Beijing, PRC

Conference Program
Friday, September 18th, 2009

12.25 h **V 20**

Correlations in Weathering Results

A. Geburtig, V. Wachtendorf, BAM, Berlin, D
P. Trubiroha, Berlin, D

12.50 h

Lunch

Session 8

Stabilization and Special Influences

Chairperson: E. Földes, Chemical Research
Center, Budapest, H

14.00 h **V 21**

**XLPE Degradation under Conservative
Electrical Fields over Long Time Intervals**

A. Harlin, VTT, Technical Research Centre of
Finland, Espoo, FIN
P. Hyvönen, Helsinki University of Technology,
Helsinki, FIN

14.25 h **V 22**

**Photodegradation of ABS for Technological
Applications – Influence of Hindered Amine
Stabilizers (HALS) and Ultraviolet Absorbers
(UVA) on Copolymer Stabilization**

R. M. Santos, A. Machado, G. Botelho,
IPC-Universidade do Minho, Guimaraes, P
P. Jorge, Colorgal, Cores de Portugal Lisboa, P

14.50 h **V 23**

**Degradation of PE Foils with PDQ-H®
Addition**

S. M. Kuberski, A. Bomba-Stolarek, Technical
University of Lodz, Lodz, PL

15.15 h

Closing Remarks

15.30 h

Technical Tour

to the Budapest University of Technology and
Economics, Department of Physical Chemistry
and Material Science, Laboratory of Plastics and
Rubber Technology



**Gesellschaft für
Umweltsimulation e.V.**

Registration Form

Gesellschaft für Umweltsimulation e.V.
Sonja Holatka
Joseph-von-Fraunhofer-Str. 7
76327 Pfinztal
Germany
Fax: +49 (0) 721 / 4640-345

It is agreed that pictures being taken during this event may be published.

Name/First name _____

Title _____

Affiliation _____

Street _____

Postal Code/City _____

Country _____

Phone _____

Fax _____

E-mail _____

Please type or print

Conference Fees

- Registration before May 15th, 2009: € 390,--
- Registration after May 15th, 2009: € 490,--
- Training course € 100,--
- Accompanying person (welcome reception, dinner, sightseeing tour) € 90,--

Payment

- By money order (after receipt of invoice)
- Cash on arrival

Hotel Room Reservation

Please complete the attached booking form and return it as soon as possible, but before August 3rd 2009 to Danubius Hotel Gellért.
Fax: +36 1 889-5505, E-Mail: gellert.reservation@danubiushotels.com

Please note: The earlier you book your room the greater the chance that your chosen room type will be available.

Date

Signature

Gesellschaft für Umweltsimulation e.V.
Sonja Holatka
P. O. Box 12 40

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Germany