



**Gesellschaft für
Umweltsimulation e.V.**

Program

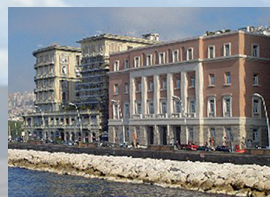
7th European Weathering Symposium EWS

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

September 16 - 18, 2015
Naples, Italy



Confederation of European
Environmental Engineering
Societies



CRdC Technologie Scarl

7th European Weathering Symposium EWS

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

Invitation

It is with great pleasure that we invite you to participate in the 7th European Weathering Symposium EWS (XXIXth Colloquium of Danubian Countries on Natural and Artificial Ageing of Polymers) to be held in Naples on September 16 - 18, 2015.

Launched in 1967 by four relevant institutes from Austria, Czechoslovakia, Hungary and Yugoslavia, the Colloquia of Danubian Countries have been the only exclusive meetings in the field of natural and artificial weathering of polymers for more than 45 years. Relaunched as EWS they have attracted a broader scope of attendees.

In the tradition of these colloquia, the EWS is a meeting point for experts from industry and academia to learn from each other. The main topics in 2015 will be:

- Weathering of Polymeric Products – Plastics and Coatings
- Determination, Simulation and Effects of Relevant Climatic Quantities
- New Test Procedures and Devices
- Weathering Reference Materials
- Analysis of Polymer Degradation
- Service-Life Prediction

Schedule

September 16, 2015

2.00 p.m. - 5.00 p.m. Training course

7.00 p.m. - 9.00 p.m. Welcome reception

September 17, 2015

09.00 a.m. - 05.00 p.m. Conference day 1

05.30 p.m. - 07.30 p.m. Sightseeing tour

08.00 p.m. - 11.00 p.m. Conference dinner

September 18, 2015

09.00 a.m. - 04.00 p.m. Conference day 2

General Information

Language

The conference language will be English.

Program

Program updates will be available on www.weathering-symposium.org by April 30, 2015.

International Scientific Committee

Peter Trubiroha (Chairman), Berlin, D
Domenico Acierno, UniNa, DIMP, Naples, I
Sahar Al-Malaika, AU, CEAC, Birmingham, UK
Eva Bejarano, AIMPLAS, Paterna, ES
Joannie W. Chin, NIST, Gaithersburg, USA
Jean-Luc Gardette, CU, CNRS, Aubière, F
António Guerreiro de Brito, IBB-UMinho, Braga, P
Olga Guseva, EMPA, Dübendorf, CH
Ali Harlin, VTT, Espoo, FIN
Anne-Lise Høg Lejre, DTI, Taastrup, DK
Leopold Kranner, ÖGUS, Vienna, A
Kenneth Möller, SP Technical Research Inst., Borås, S
Constantine Papaspyrides, NTU Athens, LPT, GR
Krzysztof Pielichowski, CUT CTP, Cracow, PL
Jan Pilar, IMC, Prague, CZ
Béla Pukánszky, BME, Budapest, HU
Vesna Rek, UZ, Zagreb, HR
Lyda Rychla, PI, Bratislava, SK
Jacques Sampers, DSM Research, Geleen, NL
Yoshimitsu Takane, JWTC, Choshi City, J
Volker Wachtendorf, BAM, Berlin, D
Mireille Wenkin, CoRI, Limelette, B

Chairman

Thomas Reichert, Fraunhofer ICT, Pfinztal, Germany

Organisation/Conference Management

The European Weathering Symposium is being organised on behalf of CEEES by the German Society for Environmental Engineering GUS (Gesellschaft für Umweltsimulation e.V.) and the University of Naples Federico II, supported by the National Research Council and the Regional Centre of Competence New Technologies.

Participation Fee

The participation fee is € 450,-- for registrations up to June 12, 2015. This fee includes lunches and refreshments, the welcome reception, the sight-seeing tour and the conference dinner. For registrations after June 12, 2015 the fee is € 550,--.

Cancellation

If written cancellation is received before August 10, 2015, a refund will be given minus € 100,-- administration charge. No refunds can be provided for registrations cancelled after this date.

General Information

Registration

Please register online at www.weathering-symposium.org
or mail the attached registration form to:
Gesellschaft für Umweltsimulation GUS
Sabine Aref
c/o Fraunhofer ICT
P.O. Box 1240
D-76318 Pfinztal, Germany
Phone: +49(0)7214640-391
Fax: +49(0)7214640-345
secretariat@gus-ev.de
www.gus-ev.de

The registration fee must be paid on receipt of invoice from the secretariat or in cash in Euros on arrival at the venue. Credit cards are not accepted.

Conference Venue

The symposium will be held at:
Congress Center of the University
of Naples Federico II
Via Partenope 36
80121 Naples, Italy

Accommodation

GUS has reserved a block of rooms at the Hotel Royal Continental (next to the Congress Center), Hotel Rex and Bed & Bed Santa Lucia 50 at special convention rates from September 16 – 18, 2015. Reservation must be made before June 12, 2015.

Please indicate your room reservation on the attached Registration Form and send it to Sabine Aref before June 12, 2015.

Deadlines

Early registration:
June 12, 2015

Hotel room reservation:
June 12, 2015

Pre-Program

CEEES Meeting Program

(Additional Registration is necessary)

Tuesday, September 15, 2015

2.00 p.m. – 5.00 p.m.

CEEES Technical Advisory Board Meetings

Air Pollution and Climatic Effects
Mechanical Environment
Reliability and ESS

8.00 p.m.

CEEES Dinner

Wednesday, September 16, 2015

9.00 a.m. – 12.30 p.m.

CEEES General Assembly

12.30 p.m.

Lunch

Pre-Symposium Program

Wednesday, September 16, 2015

2.00 p.m. – 5.00 p.m.

Training Course

Vibrational spectroscopy techniques to investigate polymer ageing: Water sorption, photo-oxidative and thermo-oxidative degradation

Educational training course in the Congress Center of the University of Naples Federico II, presented by Pellegrino Musto, Institute for Polymers, Composites and Biomaterials, National Research Council.

The participation fee is € 80,--.

Please indicate in the registration form if you would like to attend.

7.00 p.m. – 9.00 p.m.

Welcome Reception

Congress Center of the University of Naples Federico II

Conference Program
Thursday, September 17, 2015

9.00 a.m.

Opening of the Conference

T. Reichert, CEEES, GUS and Fraunhofer ICT, Pfinztal, D

Greetings

P. Russo, Institute for Polymers, Composites and Biomaterials, National Research Council, Pozzuoli (Na), I

Session 1

Basics of weathering I

Chair: A. Riedl, ATLAS MTT, Linsengericht, D

9.15 a.m.

OP 01

Global UV radiation mapping enabling improved life time prediction for plastic applications

G. Huber, BASF Schweiz AG, Basel, CH

9.40 a.m.

OP 02

On the yet unsolved problem of the determination of precise surface temperatures of specimens exposed to natural and artificial weathering

P. Trubiroha, Berlin, D

A. Geburtig, V. Wachtendorf, BAM Federal Institute for Materials Research and Testing, Berlin, D

10.05 a.m.

OP 03

The specimen surface temperature in artificial weathering - often neglected but invaluable for durability and correlation studies

F. Feil, A. Schönlein, ATLAS MTT, Linsengericht, D
M. McGreer, ATLAS MTT, Illinois, USA

10.30 a.m.

Coffee Break

Session 2

Basics of weathering II

Chair: S. Al-Malaika, AU, CEAC, Birmingham, UK

11.00 a.m.

OP 04

Effectiveness of the ultra high accelerated weathering test methods

S. Suga, Suga Test Instruments Co., Ltd., Tokyo, J

11.25 a.m.

OP 05

SEPAP MHE: A new ultra-accelerated photo-ageing device for the prediction of the weatherability of polymeric materials

E. Desnoux, Renault, Research Department, Guyancourt, F

N. Siampiringue, CNEP, AUBIERE Cedex, F

11.50 a.m.

OP 06

Measured changes in polyethylene resulting from NIST SPHERE exposures

C. White, A. Forster, D. Hunston, National Institute of Standards and Technology, Gaithersburg, MD, USA

12.15 p.m.

Lunch

Conference Program
Thursday, September 17, 2015

Session 3

1.15 p.m.

PP 1

A new irradiation device for medium scale plastic products

A. Geburtig, T. Goedecke, V. Wachtendorf, BAM Federal Institute for Materials Research and Testing, Berlin, D

PP 2

Ageing of Blue Wool reference materials in real and simulated environments

R. Perälä, A. Kuusisto, H. Suokivi, T. Oksa, Solar Simulator Finland Ltd., Littoinen, FIN

PP 3

Effect of accelerated weathering on mechanical properties of bio-based thermoformed slabs

P. Russo, Institute for Polymers, Composites and Biomaterials, National Research Council, Pozzuoli (Na), I

D. Acierno, CRdC Tecnologie S.c.a.r.l., Napoli, I
F. Costa, S. Cioffi, S. Giudice, I. Nedi, Carpisa S.p.A., Interporto di Nola (Na), I

PP 4

Effect of accelerated weathering on structure and comfort factors of commercial polyurethane foams for mattress

P. Scarfato, L. Di Maio, L. D'Arienzo, L. Incarnato, Department of Industrial Engineering, University of Salerno, Fisciano (SA), I

S. Rinaldi, Rinaldi Group s.r.l., Giffoni Valle Piana (SA), I

PP 5

Dose response relations of PP

T. Reichert, Fraunhofer Institute for Chemical Technology ICT, Pfinztal, D

PP 6

Life cycle assessment for the alternative use of polymeric materials in the solar thermal sector

R. Weiß, S. Hahn, A. Piekarczyk, S. Frick, K.-A. Weiß, M. Köhl, Fraunhofer Institute for Solar Energy Research ISE, Freiburg, D

Conference Program
Thursday, September 17, 2015

Session 4

2.00 p.m. **OP 07**

Performance of coatings

Chair: H. L. Dedeurwaerder, CoRI, Limelette, B

EU-Project SERVOWOOD - improved Service Life Prediction and test capability for wood coatings

M. Arnold, Empa, Swiss Federal Laboratories for Materials Science and Technology, Applied Wood Materials, Dübendorf, CH

2.25 p.m. **OP 08**

Comparison of available anticorrosion paint systems for heritage protection

K. Möller, M. Palm, SP Technical Research Institute of Sweden, Borås, S
B. Carlsson, Linnaeus University, Kalmar, S

2.50 p.m. **OP 09**

Scanning acoustic microscopy for detection of weathering induced defects in coatings

I. Alig, H. Oehler, M. Bargmann, D. Lellinger, Fraunhofer Institute for Structural Durability and System Reliability LBF, Darmstadt, D

3.15 p.m.

Coffee Break

Session 5

Different exposure procedures

Chair: A. Geburtig, BAM Federal Institute for Materials Research and Testing, Berlin, D

3.45 p.m. **OP 10**

When standards get in the way of innovation

J. Quill, Q-Lab Corporation, Westlake, Ohio, USA

4.10 p.m. **OP 11**

Laboratory Weathering Test for simulating the leaching from artificial sporting grounds

V. Wachtendorf, U. Kalbe, O. Krüger, N. Bandow, A. Geburtig, BAM Federal Institute for Materials Research and Testing, Berlin, D

4.35 p.m. **OP 12**

Photoyellowing of transparent materials as quantified with a setup of lasers

A. Heikkilä, Finnish Meteorological Institute, R&D/Climate Research, Helsinki, FIN
A. Vaskuri, P. Kärhä, Metrology Research Institute, Aalto University, Espoo, FIN

5.30 p.m. - 7.30 p.m.

Guided Tour to Castle dell'Ovo

8.00 p.m. - 11.00 p.m.

Conference Dinner

Conference Program
Friday, September 18, 2015

Session 6

9.00 a.m. **OP 13**

Molecular scale reactions

Chair: P. Russo, Institute for Polymers, Composites and Biomaterials, National Research Council, Pozzuoli (Na), I

Water sorption thermodynamics and mass transport in solid polymers: addressing molecular interaction issues

G. Mensitieri, G. Scherillo, Dept. of Chemical, Materials and Production Engineering, University of Naples Federico II, Naples, I

P. Musto, Institute for Polymers, Composites and Biomaterials, National Research Council of Italy, Pozzuoli (Naples), I

9.25 a.m. **OP 14**

Weathering of polymers: from molecular scale towards macroscopic properties

J.-L. Gardette, S. Therias, Clermont Université, Université Blaise Pascal and CNRS, F

P.-O. Bussiere, Clermont Université, Université Blaise Pascal and Clermont Université, Ecole Nationale Supérieure de Chimie, Institut de Chimie de Clermont-Ferrand (ICCF) Equipe Photochimie, Aubière, F

9.50 a.m. **OP 15**

Photochemical behaviour of polylactide added with agri-food waste extracts

S. Agustin-Salazar, H. Soto-Valdez, L.A. Medina-Juárez, N. Gámez-Meza, Departamento de Investigaciones Científicas y Tecnológicas, Universidad de Sonora, Sonora, MEX

P. Cerruti, Institute for Polymers Composites and Biomaterials (IPCB-CNR), Pozzuoli (Na), I

10.15 a.m. **OP 16**

Kinetic modelling of photo-thermal oxidation profiles in polypropylene pieces

A. François-Heude, Arts et Métiers ParisTech, PIMM, Paris and Renault, Research Department, Guyancourt, F

E. Richaud, X. Colin, Arts et Métiers ParisTech, PIMM, Paris, F

E. Desnoux, Renault, Research Department, Guyancourt, F

10.40 a.m.

Coffee Break

Conference Program
Friday, September 18, 2015

Session 7

11.10 a.m. **OP 17**

Advances in field and lab exposure I

Chair: J.-L. Gardette, Clermont Université, Université Blaise Pascal and CNRS, Aubière, F

Soiling and abrasion testing of functional surfaces for solar energy systems adapted to extreme - arid and maritime - climatic conditions

E. Klimm, T. Kaltenbach, D. Philipp, M. Masche, K.-A. Weiss, M. Köhl, Fraunhofer Institute for Solar Energy Research ISE, Freiburg, D

11.35 a.m. **OP 18**

Spectroscopic investigations on the ageing/degradation of PV-encapsulants

G. C. Eder, P. Grillberger, OFI, Austrian Research Institute for Chemistry and Technology, Vienna, A
B. S. Chernev, FELMI-ZFE, Austrian Centre for Electron Microscopy and Nanoanalysis, Graz, A
C. Hirschl, CTR Carinthian Tech Research AG, Villach, A

12.00 p.m. **OP 19**

Round robin testing of various polymeric back-sheets for PV-modules with different ultra-violet radiation sources and sample temperatures

M. Köhl, A. Ballion, Fraunhofer Institute for Solar Energy Research ISE, Freiburg, D
Y.-H. Lee, H.-S. Wu, Center for Measurement Standards, Industrial Technology Research Institute, Hsinchu, Taiwan, RC
K. Scott, ATLAS MTT, Illinois, USA
S. Glick, P. Hacke, NREL, Golden CO, USA
H. J. Koo, FITI Testing & Research Institute, Seoul, KOR

12.25 p.m. **OP 20**

Prediction of long term durability of offshore wind farms. Improvement of the durability by decreasing stress

H. L. Dedeurwaerder, CoRI - Coating Research Institute, Limelette, B

12.50 p.m.

Lunch

Conference Program
Friday, September 18, 2015

Session 8

2.00 p.m. **OP 21**

Advances in field and lab exposure II

Chair: J. Quill, Q-Lab Corp., Cleveland, USA

Thermal behaviour and ageing of polyurethane foams reinforced by polyhedral oligomeric silsesquioxanes

J. Pagacz, E. Hebda, S. Michalowski, J. Ozimek, K. Pielichowski, Department of Chemistry and Technology of Polymers, Faculty of Chemical Engineering and Technology, Cracow University of Technology, Kraków, PL

2.25 p.m. **OP 22**

Degradation of polymer clay-nanocomposites: a novel approach to enhancing service life performance

S. Al-Malaika, Polymer Processing and Performance Research Unit, School of Engineering & Applied Science, Aston University, Birmingham, UK
N. Tz. Dintcheva, Polymer Processing and Performance Research Unit, School of Engineering and Applied Science, Aston University, Birmingham, UK and Dipartimento di Ingegneria Civile, Ambientale, Aerospaziale, dei Materiali, University of Palermo, Palermo, I
E. Morici, Dipartimento di Ingegneria Civile, Ambientale, Aerospaziale, dei Materiali, University of Palermo, Palermo, I

2.50 p.m. **OP 23**

Photo-stability improvement of SBS through carbon nanotubes

N. T. Dintcheva, R. Arrigo, E. Morici, Dipartimento di Ingegneria Civile, Ambientale, Aerospaziale, dei Materiali, University of Palermo, Palermo, I

3.15 p.m. **OP 24**

Mitigation of microplastics release caused by textile washing processes: LIFE MERMAIDS PROJECT

S. Gavignano, A. Montarsolo, R. Mossotti, CNR-ISMAR, Biella, I
M. Avella, M. C. Cocca, E. Di Pace, F. De Falco, M. P. Gullo, CNR-IPCB, Pozzuoli, I
M. Brouta-Agnésa, R. Escudero, LEITAT, Terrassa, E
J. Lancharro, R. Nicolau, Polysistec, Castellar del Vallès, E
M. Westerbos, J. Dagevos, Plastic Soup Foundation, Amsterdam, NL

3.40 p.m.

Closing Remarks

Gesellschaft für Umweltsimulation e.V.
Sabine Aref
P. O. Box 12 40

76318 Pfinztal
Germany



If online registration is not possible, please use the form below:

Gesellschaft für Umweltsimulation e.V.
Sabine Aref
Joseph-von-Fraunhofer-Str. 7
76327 Pfinztal
Germany
Fax: +49 (0) 721 46 40-345
E-mail: secretariat@gus-ev.de

Invoice Address

Surname/First Name _____
Title _____
Organisation _____
Street _____
Postal Code/City _____
Country _____
Phone _____
Fax _____
E-mail _____

Please type or print

Conference Fee

- Registration before June 12, 2015: € 450,--
- Registration after June 12, 2015: € 550,--
- Training course € 80,--
- Accompanying person (welcome reception, dinner, sightseeing tour) € 90,--

Payment

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

Hotel Room Reservation (to be made before June 12, 2015)

The following room reservation is requested: (Please indicate your reservation)

at Hotel Royal Continental, Naples "Sea view Superior Room"

(Special room rates only from September 16 – 18, 2015 – incl. breakfast and VAT)

- Double room/single use/per night: € 129,-- Double room/night: € 149,--

at Hotel Rex, Naples (Room rates incl. breakfast and VAT)

- Single room/per night: € 80,-- Double room/night: € 100,--

at Bed & Bed Santa Lucia 50, Naples (Room rates excl. breakfast and VAT)

- Single room/per night: € 65,-- Double room/night: € 85,--

Arrival date: **Departure date:**

My reservation is guaranteed by Credit Card:

Expiration date: Card Number:

I agree that pictures taken during this event may be published.

_____ Date Signature



**Gesellschaft für
Umweltsimulation e.V.**

