

# CALL FOR PAPERS

## Technology Conferences: Reinforced Plastics

Papers are being solicited for a two-day conference in Reinforced Plastics, which will be held December 2-3, 1980, at the Hacienda Hotel, El Segundo, California (near the L.A. Intl. Airport).

These conferences are being organized by Technology Conferences with the cooperation of the So. California Section of the Society of Plastics Engineers. SPE members receive a reduction in registration fees.

This conference will cover the state of the art and recent developments in reinforced plastics in general and reinforcements, resins (thermosets and thermoplastics), special additives, molding technology (compression, extrusion, lamination, injection, RIM, etc.), equipment, quality control, applications, and case histories.

Send an abstract of your proposed paper (50-100 words) as soon as possible to *Technology Conferences*, P.O. Box 842, El Segundo, CA 90245: ATTN: Program Director.

## 26th National SAMPE Symposium and Exhibition

Papers are now being solicited for the 26th National SAMPE Symposium and Exhibition which will be held April 28-30, 1981, at the Hyatt Hotel at the Los Angeles Airport in Los Angeles, California. The theme for this symposium is "Material and Process Applications—Land-Sea-Air-Space." Papers should be on metallic and nonmetallic (organic and inorganic) material and process research, development and applications in such areas as aerospace, automotive, marine, medical and recreation, as well as related topics pertaining to quality assurance, safety, repair, energy, and OSHA/EPA requirements. Participants are also sought for workshop sessions in which future problem areas will be discussed with possible avenues of solution. Provisions will be made for special sessions for presentation of material subject to the FEDD and other similar contractually limited dissemination policies.

Two copies of a 250-word abstract, including author(s) name, affiliation, business address, and telephone number should be submitted no later than **August 1, 1980**, with completed papers due **January 1,**

**1981.** We cannot consider papers that have appeared in open literature or papers that have been delivered to another national meeting. Submit abstracts to John A. Van Hamersveld, Program Chairman, Lockheed-California Co., Dept. 76-32, Bldg. 63, Plant A-1, P.O. Box 551, Burbank, California 91520 (213-847-5158).

For further information regarding this Symposium and Exhibition, contact Marge Smith, SAMPE National Business Office, P.O. Box 613, Azusa, California 91702 (213-334-1810); or Eugene R. Crilly, General Chairman, Rockwell International/North American Aircraft Div., Dept. 115-075, XA-03, P.O. Box 92098, Los Angeles, California 90009 (213-647-6666).

## International Conference on Composite Structures

The aims of the International Conference on Composite Structures (to be held September 16-18, 1981) are to bring together users, manufacturers, designers, and researchers in the general field of composite materials used in structural/engineering applications. Current problems in composite engineering will be examined from practical as well as theoretical points of view, and extensions of existing design approaches will be sought.

Papers are requested on all aspects of composite materials used in structural/engineering situations from practical and theoretical viewpoints. Papers submitted must be original, previously unpublished, and should advance technical knowledge of the subject. All papers presented will be published in the Conference Proceedings.

Authors must comply with the following time-table so that preprints can be made available to delegates/authors. October 31, 1980, is the deadline for a 500-word abstract which outlines in sufficient detail the contents of the proposed paper and clearly indicates the advances made. Abstracts should be sent to Dr. I. H. Marshall, Conference Director, Paisley College of Technology, Department of Mechanical and Production Engineering, High Street, Paisley, Scotland (phone 041-887-1214 ext. 258 or 041-887-5948). Authors will be notified of the reviewers' decision by December 31, 1980, and the deadline for submitting the complete paper is March 31, 1981.

# CALENDAR ON COMPOSITES

## **September 15-19, 1980**

*Composite Material Processing and Quality Assurance*  
Los Angeles, CA  
Contact: Nonie Watanabe  
6266 Boelter Hall, UCLA Extension  
Los Angeles, CA 90024 (213-825-1047)

## **October 2-3, 1980**

*Strength and Fracture of Composites*  
Millcroftninn, Afton, Canada  
Contact: M. R. Piggott  
Center for Study of Materials  
Faculty of Engineering  
University of Toronto, Canada M5S1A4

## **October 7-9, 1980**

*12th Annual SAMPE Technical Conference*  
Seattle, WA  
Contact: Marge Smith  
SAMPE, P.O. Box 613  
Azusa, CA 91702 (213-334-1810)

## **October 26-30, 1980**

*Flywheel Technology Symposium*  
Scottsdale, AZ  
Contact: Shelley Rose  
Lawrence Livermore National Laboratory  
P.O. Box 808, Livermore, CA 94550 (415-422-8200)

## **November 10-14, 1980**

*ASTM E-9 and E-7: Damage in Composite Materials*  
Bal Harbour, FL  
Contact: J. Palmer  
ASTM, 1916 Race Street  
Philadelphia, PA 19103 (215-299-5517)  
(See preliminary program at the end of this calendar.)

## **November 11-12, 1980**

*ASTM D-30: Composites for Elevated Temperature Applications*  
Bal Harbour, FL  
Contact: D. A. Tobias  
ASTM, 1916 Race Street  
Philadelphia, PA 19103 (215-299-5546)

## **December 2-3, 1980**

*Technology Conference: Reinforced Plastics*  
El Segundo, CA  
Contact: Technology Conferences  
P.O. Box 842, El Segundo, CA 90245

## **January 19-23, 1981**

*Gordon Research Conference: Composites*  
Holiday Inn, Ocean Front, CA  
Contact: Dr. A. M. Cruikshank  
University of Rhode Island  
Kingston, RI 02881 (401-783-4011, ext. 3372)

## **January 27-29, 1981**

*5th DOD/NASA Conference on Fiber Composites and Structural Design*  
New Orleans, LA  
Contact: Mrs. S. Tryciebi  
Naval Air Development Center  
Code 6043, Warminster, PA 18974 (215-441-2051)

## **April 6-8, 1981**

*AIAA/ASME/ASCE/AHS 22nd Structures, Structural Dynamics, and Materials Conference*  
Atlanta, GA  
Contact: Dr. R. M. Laurenson  
McDonnell Douglas Astronautics Co.  
St. Louis, MO 63166 (314-232-6754)

## **April 9-10, 1981**

*AIAA Dynamics Specialists Conference*  
Atlanta, GA  
Contact: Dr. R. M. Laurenson  
McDonnell Douglas Astronautics Co.  
St. Louis, MO 63166 (314-232-6754)

## **April 28-30, 1981**

*26th Annual SAMPE Symposium and Exhibition*  
Los Angeles, CA  
Contact: Marge Smith  
SAMPE, P.O. Box 613  
Azusa, CA 91702 (213-334-1810)

## **May 12-13, 1981**

*ASTM D-30: Sixth Conference on Composite Materials Testing and Design*  
Phoenix, AZ  
Contact: D. A. Tobias  
ASTM, 1916 Race Street  
Philadelphia, PA 19103 (215-299-5546)

## **May 18-21, 1981**

*International Symposium on the Mechanical Behavior of Structural Media*  
Carleton University, Ottawa, Canada  
Contact: Prof. A. P. S. Selradurai  
Department of Civil Engineering  
Ottawa, Ontario, Canada K1S5B6

**September 16–18, 1981**

*International Conference on Composite Structures*

Paisley, Scotland

Contact: Dr. I. H. Marshall

Department of Mechanical and Production Engineering

Paisley College of Technology

Paisley, Scotland (041–887–1241, ext. 258)

**October 13–15, 1981**

*13th National SAMPE Technical Conference*

Mt. Pocono, NJ

Contact: Marge Smith

SAMPE, P.O. Box 613

Azusa, CA 91702 (213–334–1810)

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**Preliminary Program. ASTM Symposium  
on Damage in Composite Materials:  
Basic Mechanisms, Accumulation,  
Tolerance, and Characterization**

*Bal Harbour, Florida*

*November 10–14, 1980*

**First Day**

**Session I—Damage Mechanisms: Accumulation and Nondestructive Investigation**

Chairperson: T. K. O'Brien

U.S. Army Research & Technology Laboratories

NASA Langley Research Center

Hampton, VA 23665

8:30 a.m. Introductory Remarks by Symposium Co-Chairmen

K. L. Reifsnider, VPI&SU, Blacksburg, VA

L. Mordfin, NBS, Washington, DC

J. T. Fong, NBS, Washington, DC

9:30 a.m. "Damage Documentation in Composites by Stereo Radiography" by

G. P. Sendekyj and G. E. Maddus, Flight Dynamics Laboratory,  
Wright-Patterson AFB, OH, and E. Porter, Universal Technology Cor-  
poration, Dayton, OH

10:00 a.m. BREAK

10:30 a.m. "Fractographic Studies of Graphite/Epoxy Fatigue Specimens" by

G. E. Morris, McDonnell Aircraft Company, St. Louis, MO

11:00 a.m. "Investigation of Cumulative Damage Development in Graphite/Epoxy

Laminates" by J. E. Masters, General Dynamics, Fort Worth, TX, and  
K. L. Reifsnider, VPI&SU, Blacksburg, VA

11:30 a.m. "Effects of Moisture, Residual Thermal Curing Stresses, and Mechanical

Load on the Damage Development in Quasi-Isotropic Laminates" by  
R. D. Kriz, NBS, Boulder, CO, and W. W. Stinchcomb, VPI&SU,  
Blacksburg, VA

12:00 noon LUNCH

**Session II—Damage Mechanisms: Tolerance and Characterization**

Chairperson: W. Illg

NASA Langley Research Center

Hampton, VA 23665

1:30 p.m. "Mechanisms of Fatigue Damage in Boron/Aluminum Composites" by

W. S. Johnson, NASA Langley Research Center, Hampton, VA, and  
G. J. Dvorak, University of Utah, Salt Lake City, UT

2:00 p.m. "Stiffness-Reduction Mechanisms in Composite Laminates" by

A. Highsmith and K. L. Reifsnider, VPI&SU, Blacksburg, VA

2:30 p.m. "The Dependence of Transverse Cracking and Delamination on Ply Thickness

in Graphite/Epoxy Laminates" by F. W. Crossman, Lockheed Palo Alto  
Research Laboratories, Palo Alto, CA, and A. S. D. Wang, Drexel Uni-  
versity, Philadelphia, PA

- 3:00 p.m. BREAK
- 3:30 p.m. "Delamination Growth in Composite Laminates" by T. K. O'Brien,  
U.S. Army Research and Technology Laboratories, NASA Langley  
Research Center, Hampton, VA
- 4:00 p.m. "Impact Characterization of Composite Materials Using Interlaminar  
Fracture Toughness" by A. G. Miller, P. E. Hertzberg, and D. W. Ran-  
tala, Boeing Commercial Airplane Company, Seattle, WA
- 4:30 p.m. "Characterizing Delamination Growth in Graphite/Epoxy" by D. J. Wilkins,  
J. R. Eisenmann, R. A. Camin, W. S. Margolis, and R. A. Benson,  
General Dynamics, Fort Worth, TX

## **Second Day**

### **Session III—Damage Mechanisms: Tolerance and Characterization (cont.)**

Chairperson: D. J. Wilkins  
General Dynamics/Fort Worth Div.  
P.O. Box 748  
Fort Worth, TX 76101

- 8:30 a.m. "Compression Fatigue Behavior of Composites in the Presence of  
Interlaminar Delaminations" by R. L. Ramkumar, Northrop Corpora-  
tion, Hawthorne, CA
- 9:00 a.m. "Effect of Stacking Sequence on Delamination Propagation in Composite  
Laminates" by M. M. Ratwani and H. P. Kan, Northrop Corporation,  
Hawthorne, CA
- 9:30 a. m. "Damage Mechanism and Fatigue Life Prediction of Graphite/Epoxy  
Composites" by R. Badaliance, McDonnell-Douglas Company, St.  
Louis, MO
- 10:00 a.m. BREAK
- 10:30 a.m. Summary of Invited Speaker Panel Discussion on "What is Damage?" by  
J. T. Fong, NBS, Washington, DC
- 11:00 a.m. Damage in Continuous Fiber Composites—A Debate by Symposium  
Participants
- 12:00 noon ADJOURN