

Conference Report

Sixth Annual Meeting of the Adhesion Society

The Sixth Annual Meeting of the Adhesion Society took place 20-23 February 1983 in Savannah, GA. Papers were presented on techniques useful for characterizing and analyzing adhesive performance and interfaces which were of general interest to the fiber composites community.

Marcott (Procter and Gamble) and Debe (3M Corp.) showed how reflection-absorption infrared spectroscopy could be used to study adsorbed monolayers and plasma-etched surfaces. The major problem in the infrared spectroscopy of surfaces (even when using ATR methods) is that the spectrum of the substrate swamps out the bands of interest from the surface layer. In the new approach, a very thin film of polymer is deposited on a flat, polished metal substrate, then treated as desired. The reflection spectrum of the unmodified film is subtracted from that of the treated surface to give the desired spectrum of the surface layer.

Ishida and Yoshida of Case Western Reserve University covered the use of FT-IR reflection-absorption spectroscopy to study the curing of and epoxy coating on alkyl imidazole-treated copper. This technique, previously used only to study the interface between the metal and the organic coating in these particular materials, showed chemical reactions occurring at the epoxy-imidazole interface.

Tom Solomon (B. F. Goodrich) showed the importance of rubber latex and resorcinol formaldehyde resin (RFL), and their adhesion to each other, to the tire industry. Predips of 2% water-soluble epoxide and other materials, followed by RFL, are required to get good adhesion to polyester, aramid, and other synthetic fibers.

Doug Rahnig (B. F. Goodrich) showed DSC and dynamic me-

chanical analysis data indicating that RFL films are two-phase materials. This information was used along with theoretical expressions to conclude that each separate phase was continuous in nature and thus that RFL is an interpenetrating polymer network.

Gary Hamed and Tom Donatelli (University of Akron) described the poor adhesion of brass-plated steel cord and natural rubber and suggested that a weak sulfide film is the cause. In this case brass is the *adhesive*.

Trainor and Kelley (University of Akron) presented an approach for determining the factors that affect the fracture energy of cross-linked glassy polymers. They used model materials of controlled structure, prepared by embedding cross-linked polystyrene beads of known characteristics in a polystyrene matrix. Fracture properties were most strongly influenced by the concentration of cross-linked zones (beads) and the degree of interpenetration between the cross-linked and noncross-linked phases.

D. J. Vaughan (Clark-Schwebel Fiber Glass) described studies of the moisture-induced failure of glass-reinforced composites. The results suggested three general areas of water attack: the surface of the glass, polymer immediately adjacent to the reinforcement, and bulk polymer distant from the interface. Water was able to reach and weaken the interface by diffusion through the polymer as well as by moving along the interface itself.

Next year's meeting will be held in Jacksonville, FL.

L. Penn
CIBA-GEIGY Corporation
Ardsley, NY 10502

Calendar on Composites

14-15 Sept. 1983

Testing, Evaluation, and Quality Control of Composites

Surrey University, Guildford, England

Contact: Tim Feest, Conference Organizer

IPC Science and Technology Press,

Guildford, Surrey, GU2 5BH, England

14-16 Sept. 1983

2nd International Conference on Composite Structures

Paisley, Scotland

Contact: I. H. Marshall

Department of Mechanical and Production Engineering

High Street, Paisley, Scotland

17-20 October 1983

4th International SAMPE Conference, SAMPE European Chapter

Bordeaux-Lac, France

Contact: Georges Jube

Aerospatiale, 37 Boulevard de Monmorency

75116 Paris, France

8-10 Nov. 1983

Delamination and Debonding of Materials

Pittsburgh, PA

Contact: Kathy Greene

ASTM, 1916 Race Street, Philadelphia, PA 19103

(215) 299-5414

13-18 Nov. 1983

ASME Winter Annual Meeting

Boston, MA

Contact: ASME

United Engineering Center, 345 East 47th Street

New York, NY 10017

16-20 Jan. 1984

39th Conference and Trade Show

Houston, TX

Contact: Wilda Roman

SPI, 355 Lexington Avenue, New York, NY 10017

(212) 573-9400

2-4 April 1984

Seventh Symposium on Composite Materials Testing and Design

Philadelphia, PA

Contact: Dr. James M. Whitney

Air Force Wright Aeronautical Laboratories

Wright-Patterson Air Force Base, OH 45433

(513) 255-6685

3-5 April 1984

29th National SAMPE Symposium and Exhibition

Reno, Nevada

Contact: Marge Smith

SAMPE, P.O. Box 613, Azusa, CA 91702

(213) 334-1810