Polymers, Laminations and Coatings Conference

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The 1989 Polymers, Laminations and Coatings Conference was held on September 5-8 in the Buena Vista Palace Hotel, Lake Buena Vista, Fla. With over 590 in attendance it was one of the largest meetings of the PLC Division.

This year's conference had 30 technical sessions with a mixture of papers and panel discussions. Based on the number of presentations and attendee interest Microwaveable Packaging, Health Care Packaging, and Solid Waste considerations were the topics of the day. All of the sessions were well attended, with sufficient time scheduled for questions after the presentations.

All told, there were 106 papers and 11 panel discussions. One pleasant aspect of the panel discussions was their use at the end of sessions to help put some of the broader issues of the topic into perspective.

The Division held its Conference Banquet and Awards Ceremony on Wednesday evening of the conference. This year, TAPPI Certificates of Appreciation were given to the following for their work on behalf of the Polymers, Laminations and Coatings Division: David J. Bentley, Jr., John V. Benham, Jeffrey S. Brandenberg, and Albert E. Chrisbacher.

The Ralph A. Klucken Scholarship was awarded to Christopher C. Gross, a senior at Western Michigan University. Gross is pursuing a degree in Paper Science and had done intern work with P. H. Glatfelter Co., Port Huron Paper, and National Starch and Chemical Corp.

Thomas Bezigian, technical director James River Corp., Parchment, Mich. was given the TAPPI Polymers, Laminations and Coatings Division Leadership Award. Bezigian also received the Andreas Ahlbrandt Prize which carries a stipend of $1,000. This prize is bestowed on the recipients of the Division Leadership Award and is funded by a gift to TAPPI from Enercon Industries Corp.

The 1989 Polymers, Laminations and Coatings Division Award was presented to Richard T. E. Sylvester, Principal Engineer at Quantum Chemical Corporation in Rolling Meadows, Ill. He also will receive the Sam Zweig Prize, which is given to the recipients of the Division Award and carries with it a stipend of $1,000. It is funded by a gift to TAPPI from Morton International, Inc.

Christopher C. Gross, a student at Western Michigan University, receives the Klucken Scholarship Award of $1,000.

Thomas Bezigian (left) accepts the Andreas Ahlbrandt Prize. **David Markgraf** of Enercon Industries presents him with a $1,000 stipend.

Technical Sessions

There were 30 Technical Sessions at the conference, with 106 presentations and 11 roundtables. Session 2, a roundtable discussion on Solid Waste Solutions, will be published separately in the February issue of *Tappi Journal.* The sessions covered Film and Extrusion, Health Care Packaging, Hot Melt Technology, Adhesives, and several specialty topics.

Microwave Packaging

This fascinating field was the subject of a number of papers which discussed the current technology of microwave ovens and the impact of that technology on packaging. In a paper by Preston B. Hudley, Jr. of E. I. DuPont de Nemours & Co., Inc., the size of the microwave food market in the U.S. was reported as $1.1 billion in 1988, doubling

Thomas Bezigian (left) receives the division Leadership and Service Award from W.A. Foster, President's representative.

Richard T.E. Sylvester (left) receives the Sam Zweig Prize from **Neal Reddeman** of Morton Thiokol as **W.A. Foster** (right) presents him with the 1989 Division Award.

over the previous year. The growth of this segment of the market is due in part to the innovative packaging being developed which allows the cooking of a larger variety of foods in microwave ovens.

This topic was discussed in a paper by S. J. Risch, of Golden Valley Microwave Foods, Inc., in which he gave the history of microwaveable popcorn as an example of a packaging success story.

Background of this came from several papers in session 3. In this session John Gerling, of Gerling Laboratories covered the basic technology of microwave ovens, including equations for the heat transfer in the ovens. His paper also discussed trends in microwave oven design which may affect future packaging requirements.

Robert Schiffman, R. F. Schiffman Associates, covered the basics of product design considerations for microwaveable products, and K. A. Wichersheim discussed methods of on-line measurements of food temperatures in microwave ovens, a critical need for packaging designers.

Health Care and Medical Packaging

Product protection and increased shelf life for sensitive products are the goals of improved medical and health care packaging. This topic was covered in five sessions, with a sixth—Medical Applications of Pressure Sensitive Adhesives—given by the Pressure Sensitive Adhesives Ad Hoc Committee also of interest to this field.

The sessions began with a panel discussion on Peel/Seal Integrity of medical packaging. This is fundamental to maintaining the sterility of medical products yet still permitting ease of access to the products. Peelable heat seals have become a mainstay of this type of packaging but the issue of seal integrity remains a concern of the industry and agencies such as the FDA, so research into improvements in these types of seals is continuing.

A second panel discussion of five industry professionals covered the packaging needs of Managed Health Care, including extended care, hospital care, home care, and related industries. This was an excellent overview of an area of packaging that is expected to grow for at least the next two decades.

Additional sessions included coverage of new materials and methods for medical and health care packaging and a special session on issues in health care packaging. In this latter session, M. F. Sturdevant, of Dow Chemical, U.S.A. discussed one of the major issues facing manufacturers, that of insuring sterilization of rigid thermoplastics.

High Barrier Packaging

The High Barrier Packaging Committee sponsored sessions on New Developments in Alloys and Blends, Testing and Characterization of High Barrier Structures, and How to Process Barrier Resins. Methods for evaluating resins and discussions of new resin blends and their applications dominated the New Developments session. In the Testing and Characterization session, methods for determining Oxygen Barrier characteristics were covered in a paper by W. Kollen and D. Gray. Limiting oxygen diffusion through packaging are the key issues for barrier

structures. A topic near to the audience's heart was a paper by Kenneth Berger of Frito Lay on the systematic selecting of barrier requirements for snack food applications. These require control of several variables and present some interesting trade-offs in selections.

Improved barrier resin processing has aided in the development of better barrier structures. The papers in the Barrier Processing session focused on these method improvements and discussed new methods just appearing in the field.

Pressure Sensitive Adhesives

Pressure sensitive adhesives, known in the trade as PSA's, are a hot topic in several applications. Usable in a variety of applications, (an entire session was devoted to medical applications of PSA's), these are an important area of development for the packaging industry. In addition to the medical applications session the PSA Committee developed sessions on New Pressure Sensitive Adhesive Developments and Process/Performance considerations of PSA's.

Hot Melt Technology

The coverage of hot melt adhesives was done in two parts, Hot Melt Technology I and II and covered adhesives, adhesive stability, and a variety of practical solutions to adhesive applications. In Hot Melt II an extremely timely presentation on Recyclable/Repulpable hot melts was made by Robert S. Forsyth, National Starch and Chemical. With increasing attention being put on recycling the development of recyclable adhesive is a top priority. This paper summarized current products from North America and Europe and discussed their characteristics and applicability to current processes.

Film Extrusion

The Film Extrusion Committee sponsored papers provided an interesting follow-up on the Conference's opening plenary session on solid waste management. There were two intriguing aspects of the solid waste management session. First, there was a sense of need for plastics, paper and foil producers, and the food processor and merchandisers to respond collectively to the disposal problem. Our common national problem can be solved by good science and responsible actions. The frank discussion of pros and cons of alternative approaches was most refreshing. The discussion was continued later in two film processing papers dealing with the incorporation of photodegradable and biodegradable additives into film polymer.

The Film Extrusion Papers told the story of continuing technology evolution. In the area of polymers we learned of methods of modifying LLDPE to enhance opticals by blend and in cast film how to improve draw resonance by selectively narrowing molecular weight. Another author cleared up several of the mysteries concerning variable performance of fluorocarbon elastomer processing aid in combination with antiblock compounds. A study of blends versus coextrusions introduced morphological analysis which suggests that the coextruded interface nucleation leads to improved properties over those expected from blends.

Film equipment developments were reported in the hardware needed for corona treatment of wide width films, current technology winding system, HMW-HDPE extrusion, comparison of blown and cast film processing, and a grooved feed extruder commentary. You can see it was a group of rather far reaching topics.

Perhaps the significance is that our industry technology is continuing to advance on a broad front. One particularly interesting paper reported on HMW-HDPE film processing, molecular structure, and physical property relationships. The fundamental scientists are beginning to probe deeper into how materials perform during fabrication and testing.

Likewise the area of testing pushed the boundaries of heat seal, puncture resistance and gas transmission know how. SPC/SQC was dealt with in terms of frequency of data collection, and which data are appropriate for SPC/SQC evaluation and which are not. These buzz words must be dealt with by good science to achieve meaningful results.

Obviously there were no remarkable new announcements or break-throughs. Our scientists and engineers were reporting on steadily improving understanding and evolutionary development. Was the program worth the price of admission?

You can bet it was. One friend summed up his view of meetings very beautifully, when he said, "If I can take home one or two ideas from each day that I can apply to the productivity of my business I am well rewarded for attending."□

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