Aisa Sendijarevic, Ph.D.
Research Director

Background

B.S., 1972, Chemistry, University of Sarajevo, Sarajevo, Bosnia; Ph.D., 1985, Chemistry, University of Zagreb, Zagreb, Croatia; 1972-75, Research Assistant, Institute "Rudjer Boskovic," Zagreb, Croatia; 1977-88, Senior Research Scientist, SODASO, Polyurethane Chemistry, Tuzla, Bosnia; 1988-2001, Senior Research Scientist, Polymer Institute, University of Detroit Mercy, Detroit, Michigan; 2001-present, Research Director, Troy Polymers, Inc., Troy.

Research areas and activities

Author of over 60 technical articles (papers, book chapters, conference proceedings) and 10 US patents. Over 25 years research experience in isocyanate-based polymers and polyurethanes. I have carried out research projects for over 30 U.S. and foreign companies. My research experience includes development of novel materials for medical, space, automotive, transportation and other industries. Specific interests include kinetics and mechanisms of isocyanate reactions; syntheses of polymers and co-polymers of defined chemical structure and properties; morphology and structure property relationships in polymers; polyurethane elastomers and foams; heat resistant polymers; environmental studies.

Organizer of two Polyurethane Elastomer Workshops sponsored by the University of Detroit Mercy (1999 & 2000). Adjunct Professor at the University of Detroit Mercy (2000).

Honors and Awards

Best poster award at *the API Polyurethanes Conference 2005*, Houston, Texas, October 17-19, 2005.

Best paper award, *The API Polyurethane Conference 2004*, Las Vegas, Nevada, 2004.

Best poster award at *the API Polyurethane Conference 2002*, Salt Lake City, Utah, October 13-16, 2002.

Best paper award at *the Polyurethanes World Congress '97, The Society of the Plastics Industry, Inc, UTECH, and European Isocyanate Producers Association,* Amsterdam, The Netherlands, Sept. 29-Oct.1, 1997.

Best paper award at *the SPI Annual Polyurethane Conference, Polyurethanes 1996*, Las Vegas, Nevada, October 20-23, 1996.

An award for industrial innovation in the field of polymeric materials, 1982, Society of Plastics and Rubber Engineers, Croatia.

Selected Publications

Novak, B. H., Sendijarevic, V., and **Sendijarevic, A.**, "Novel C12^{TM} Chain Extenders for Polyurethanes," October 18-20, 2004. Proceedings of the Polyurethanes Conference **2004**, Sponsored by the Alliance for the Polyurethanes Industry, Las Vegas, Nevada, p.p. 481-487.

Sendijarevic, V., **Sendijarevic, A.**, Sendijarevic, I., Bailey, R.E., Pemberton, D., and Reimann, K. A., "Hydrolytic Stability of Toluene Diisocyanate and Polymeric Methylenediphenyl Diisocyanate Based Polyureas under Environmental Conditions." **2004**. Environ. Sci. Technol., *38*, 1066-1072.

Moore, R., Okabe, K., Obara, T., **Sendijarevic, A**., Kobayashi, T., and Kishida, N., "Novel Co-Polymer Polycarbonate Diols for Polyurethane Elastomer Applications." **October 1-3, 2003**. *Proceeding of the Polyurethanes Conference 2003, Sponsored by the Alliance for the Polyurethanes Industry, Orlando, Florida, p.p. 241-248.*

and Townley, C.O., "Polyurethane Elastoplastics for Load Bearing Applications." **October 13-16, 2002.** *Proceedings of the API Polyurethane Conference 2002, Salt Lake City, Utah, p.307-315*

Boon, W.H., Gwyn, D.E., Forschner, T.C., Smith, C.J., **Sendijarevic A**., Frisch K.C., and Camara-Hinojosa, A., "Polyurethane Elastomers Based on Poly(1,3-Propanediol Carbonate) Glycols." **October 8-11, 2000.** *Proceedings of the Polyurethanes Conference 2000, Sponsored by the Alliance for the Polyurethanes Industry of the American Plastics Council*, Boston,

Massachusetts, p. 303-309.

Sendijarevic, A., Sendijarevic, V., Frisch, K.C., Yokelson, H.B., and Nubel, P.O., "Polyurethane Elastomers Based Upon Novel Hydrocarbon-Based Diols." **1998.** *Advances in Urethane Science and Technology;* Frisch, K.C., Klempner, D., and Prentice G., eds., Technomic: Lancester, PA, 14**,** p.p. 287-307.

Sendijarevic, A., Sendijarevic, V., Frisch, K.C., Handlin, D., Chin, S., and Masse, M., "Structure-Property Relationships of Polyurethane Elastomers Based on New Saturated Hydrocarbon Diols." **1998.** *Advances in Urethane Science and Technology;* Frisch, K.C., Klempner, D., and Prentice, G., eds., Technomic: Lancester, PA, 14**,** p.p.267-285.

Bitler, S.P., Kamp, A., Wanthal, M.A., **Sendijarevic, A**., Altarriba-Sanpos, M., Wang, J., Frisch, K.C., "Novel Delayed Action Catalysts for Polyurethane Applications." **1997.** *Proceedings of the Polyurethanes World Congress '97*, The Society of the Plastics Industry, Inc, UTECH, and European Isocyanate Producers Association, Amsterdam, The Netherlands, Sept. 29-Oct.1, 1997, p. 338.

Sendijarevic, V., **Sendijarevic, A**., Frisch, K.C. and Reulen, P., "Novel Isocyanate-Based Matrix Resins for High Temperature Composite Applications." **1996**. *Polymer Composites*, 17(2), 180.

Sendijarevic, A., Sendijarevic, V., Wang, X., Haidar, A., Dutta, U., Klempner, D. and Frisch, K.C., "Urethane-Modified Asphalt for Pavement Overlays/Wearing Courses for Road Applications." **September 26-29, 1995**. *Proceedings of the SPI Polyurethanes 1995 Conference*, Chicago, Illinois, p. 418.

Rek, V., Govorcin, E., **Sendijarevic, A**., Sendijarevic, V. and Frisch, K.C., "Photostability of Polyurethane Elastomers Based on Various Types of Diisocyanates." **1994**. *Journal of Elastomers and Plastics*, 26(2), 143.

Frisch, K.C., **Sendijarevic, A.**, Sendijarevic, V., Beckwith, G.T. and Schmidt., "New Developments in High Temperature Isocyanate-Based Structural Foams." **1993**. *Progress in Rubber and Plastics Technology*, 9(2), 89-119.

Sendijarevic, A., Sendijarevic, V., Frisch, K.C., Koruga-Lazarevic, B., and Torlic, E., "Synthesis and Properties of Urethane-Modified Polyimides." **1990**. *J. Polymer. Sci., Chem. Ed.*, 28, 3603.

Sendijarevic, A., Sendijarevic, V., and Frisch, K.C., "Studies in the Formation of Poly(oxazolidones) I. Kinetics and Mechanism of the Model Oxazolidone Formation from Phenyl Isocyanate and Phenyl Ether. Selectivity of Catalysts." **1987.** *J. Polym. Sci., Chem.Ed.*, 25, 151.

Sehovic, H., **Sendijarevic, A**., Sendijarevic, V., Frisch, K.C. and Wong, S.W., "Poly-2-Oxazolidone-Urethane Coatings." **1987**. *J. Coatings Tech*., 59(747) 29.

List of Patents

Sendijarevic, V., **Sendijarevic, A**., and Sendijarevic, I., " Foam articles," U.S. Patent No. 7,303,536; December 4, 2007 (to Troy Polymers, Inc.).

Sendijarevic, V., **Sendijarevic, A**., and Sendijarevic, I., " Foam articles," U.S. Patent No. 7,276,036; October 2, 2007 (to Troy Polymers, Inc.).

Sendijarevic, V., **Sendijarevic, A.,** and Sendijarevic, I., "Orthopedic casting articles," U.S. Patent No.. **6,984,216**; January 10, 2006 (to Troy Polymers, Inc.)

Sendijarevic, A., "Water curable casting tapes and methods of preparing the same," U.S. Patent No. **6,881,486**; 2005

Forschner, T.C., Boon, W.H., **Sendijarevic, A.**, Frisch, K.C., and Gwyn, D.E., "Thermoplastic Polyurethane Elastomers (TPUs) Prepared with Polytrimethylene Carbonate Soft Segment," U.S. Patent No. **6,593,444** July 15, 2003 (to Shell Oil Company, Houston, TX).

Townley, C.O., Frisch, K.C., **Sendijarevic, A.,** "Polyurethane and so fort containing joints," U.S. Patent No. **6,302,916;** October 16, 2001 (to BioPro, Inc.).

Sendijarevic, A., Sendijarevic, V., Frisch, K.C., Cenens, J.L.R., Handlin, Jr., D.L., Chin, S.S., and Hernandez, H., "Polyurethanes Having Improved Moisture Resistance," U.S. Patent No. **6,111,049** August 29, 2000 (to Shell Oil Company, Houston, Texas).

Handlin D.L., Chin S.S., **Sendijarevic, A.**, Sendijarevic, V., and Frisch, K.C., "Cast Polyurethane Elastomers Containing Low Polarity Amine Curing Agents," U.S. Patent No. **5,955,559** Sep. 21, 1999 (to Shell Chemical Company, Houston, Tex.).

Edenbaum, M., Frisch, K.C., **Sendijarevic, A.**, Wong, S.W., "Orthopedic Casting Material Having Reduced Tack and Reduced Slip," U.S. Patent No. **5,180,632** January 19, 1993 (to Carapace, Inc., Tulsa, OK).

Edenbaum, M., Frisch, K.C., **Sendijarevic, A.**, Wong, S.W., "Water-active Orthopedic Cast Composition Having Colorant," U.S. Patent No. **5,061,555** October 29, 1991 (to Carapace, Inc., Tulsa, OK).

Patent Applications

Arindam, D., Lavelle, L.P.JR., Friedman, C., MacGillivray, John, D., and **Sendijarevic, A.,** "High performance reticulated elastomeric matrix preparation, properties, reinforcement, and use in surgical devices, tissue augmentation and/or tissue repair," U.S. Patent Application No. **20070190108** A1; August 16, 2007.

Kassa, A., Harthcock, M., **Sendijarevic, A.,** and Sendijarevic, V., "Activable material and

method of foaming and using same," U.S. Patent Application No. **20050230027** A1; October 20, 2005 (to L&L Products, Inc.)

Deslauries, R. and **Sendijarevic,A.,** "Methods of performing medical procedures that promote bone growth, methods of making compositions that promote bone growth, and apparatus for use in such methods," U.S. Patent Application No **20050220771** A1; October 6, 2005 (to Doctors Research Group, LLC).

Datta, A., Friedman, C., Klempner, D., and **Sendijarevic, A.,** "Reticulated elastomeric matrices, their manufacture and use in implantable devices," U.S. Patent Application No. **20050043816** A1; February 24, 2005 (to Biomerix).

Datta, A., Friedman, C., Constationo, P.D., Askill, I.N., Klempner, D., Tinkelenberg, A.H., and **Sendijarevic, A.,** "Reticulated elastomeric matrices, their manufacture and use in implantable devices," U.S. Patent Application No. **20050043585** A1; February 24, 2005 (to Biomerix).

Deslauries, R., Potash, R., and **Sendijarevic,A.,** "Methods of performing medical procedures which promote bone growth, compositions which promote bone growth, and methods of making such compositions," U.S. Patent Application No **20050031578** A1; February 10, 2005 (to Doctors Research Group, LLC).

Foley, P., Argyropoulos, J.N., Bryant, D.R., Bhattacharjee, D., and **Sendijarevic, A.,** "Polyurethane compounds and articles prepared therefrom," U.S. Patent Application No **20040087754** A1; May 6, 2004 (to DOW Chemicals).