



DIVISION OF POLYMERIC MATERIALS: SCIENCE & ENGINEERING

Cooperative Research Award in Polymer Science and Engineering

Sponsored by the Eastman Kodak Company

2016 Award Winners

Brian Benicewicz

University of South Carolina

Gordon Calundann

Celanese Corporation



The 2016 Award for Cooperative Research in Polymer Science and Engineering from American Chemical Society Division of Polymeric Materials Science and Engineering is given to Dr. Brian Benicewicz at University of South Carolina [left] and Dr. Gordon Calundann [right] for the collaborative work that spanned over a period of thirty five years during Dr. Calundann's tenure at Celanese Corporation, Pemeas GmbH of Germany, and BASF Fuel Cell GmbH. This award was initiated in 1992, endowed by a generous gift from the Eastman Kodak Company. The 2016 award is presented in recognition of outstanding contributions in polymer science and engineering by the above collaborators in the areas of liquid crystalline polymers, high temperature membrane electrode assembly, membrane synthesis and fabrication, and polybenzimidazole (PBI)-based membranes for fuel cells and for hydrogen purification.

The Benicewicz/Calundann team came up with a major breakthrough in membrane synthesis and fabrication in 2000 that also included wide exploration of polybenzimidazole chemistry. The new membrane process offered flexibility in membrane manufacture with a major saving in cost. The process was adopted with extensive interactions between the academic and industry teams and put into manufacture in both the US and Germany, first for high temperature MEAs in fuel cells and now for hydrogen extraction and purification. The work has produced 11 joint patents, more than 20 publications and 14 M.S. and Ph.D. theses.

Dr. Benicewicz received B.S. in Oceanography in 1976 from Florida Institute of Technology, M.S. and Ph.D. in Polymer Chemistry from University of Connecticut respectively in 1978 and 1980. Dr. Benicewicz's research career spanned several industrial organizations and two universities. He worked at Celanese Research company as a research chemist (1980-1983), as senior scientist at Ethicon (1983-85), at Los Alamos National Lab as a staff member, section leader, and deputy group leader of polymers and coatings group during 1985-1997, as director of New York State Center for Polymer Synthesis at RPI and professor of chemistry and chemical biology at RPI during 1997-2008. He is currently the Educational Foundation Distinguished Professor and SmartState Endowed Chair in Polymer Nanocomposites at University of South Carolina. Dr. Benicewicz authored more than 120 peer-reviewed publications and 33 patents. He is a fellow of the American Association for the Advancement of Science.

Dr. Calundann received B.S. in chemistry from Wagner College in 1962 and Ph.D. in chemistry from Purdue University in 1967. Dr. Calundann rose through the ranks at Celanese starting at the rank of research chemist (1966-70), senior



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research chemist (1970-1978), group leader (1978-86), research manager (1986-90), director of strategy (1990-1992), research manager of engineering polymers department (1992-94), research director and senior research fellow (1994-1998), and advisor of Celanese Ventures (1999-2003). He served as the chief technology officer of Pemeas (2003-2006) and of BASF Fuel Cell (2006-2011). He is currently an independent consultant. Dr. Calundann's inventions are covered in more than 90 patents. He published 17 papers on his work. Dr. Calundann was recognized for his work in 1996 with the ACS Award in Industrial Chemistry. The Award was given for Dr. Calundann's invention of the Vectra® family of liquid crystalline engineering plastics and Vectran® high performance fiber. Vectra® is manufactured and marketed worldwide by Celanese Corporation.

An award symposium to honor the 2016 winners will be held at the national ACS meeting in San Diego on Tuesday, March 15 (Starting at 8:00 AM). The award will be presented at the joint Division of Polymeric Materials: Science and Engineering and Division of Polymer Chemistry joint awards reception in San Diego on Wednesday, March 16, 2016 at 5:30 p.m.