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## 62. David M Solomon

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## Personalities in Polymer Science



David H. Solomon

### Honoring Professor David M. Solomon on his 65th Birthday

David Solomon has made countless outstanding and unique contributions, as **dedicated scientist, teacher and organizer**, to the **Australian and international polymer science communities** and will continue to do so even though he retired from the University of Melbourne at the end of 1994.

David Solomon was born in Adelaide, South Australia on November 19, 1929. He moved to Sydney and entered the Sydney Technical High School and graduated in 1946. Subsequently, he was employed by Balm Paints (later renamed Dulux Australia) and thus began a lifelong interest in the chemistry of polymers, fillers and surface coatings.

While at Balm Paints he completed his B.Sc. with honors and also his M.Sc. and Ph.D. degrees at the New South Wales University of Technology (now the University of NSW), all as a part-time student. For the period 1959–1963 he was the leader of the Resin and Polymer Research Section of Dulux and in 1959–60 was seconded to ICI Paints Division at Slough in the United Kingdom to further develop patents originating from his work at Dulux. The broad experience gained in the coatings industry was reflected in his book "The Chemistry of Organic Film Formers" published in 1967 by John Wiley in New York

(reprinted in 1977) which is still available and widely used as a reference work. In 1968 he was awarded a D.Sc. from the University of NSW for a Thesis on "Studies on the Chemistry of Coating Compounds".

In 1963, David Solomon joined the Commonwealth Scientific and Industrial Research Organization (CSIRO) Division of Applied Mineralogy as a Senior Research Scientist and in the period up to 1970 was promoted to Senior Principal Research Scientist. During this time he developed an interest in the chemistry of mineral surfaces and the interaction between mineral fillers and organic polymers. For three years he was dispatched to the Georgia Kaolin Company in Elizabeth, New Jersey where a number of inventions were made based on his idea that minerals could act as templates and catalysts to carry out chemical reactions. Some of this work in the area of mineral/organic interactions was described in numerous publications including two reference books—"The Chemistry of Pigments and Fillers" published by John Wiley, New York (1983) and "The Catalytic Properties of Pigments", Technical Association of the Pulp and Paper Industry Inc., Atlanta, Georgia (1977).

Following his transfer to the CSIRO Division of Applied Chemistry in 1970, David Solomon established the Polymer Research Group within the Division and, after a reorganization by CSIRO of its chemistry divisions, became the Foundation Chief of the CSIRO Division of Applied Organic Chemistry (later renamed the Division of Chemicals and Polymers) in 1974. He continued in this position until 1989, including a period acting as Director of the CSIRO Institute of Industrial Technologies in 1986–87, and oversaw many changes in the Division including its move from Fishermans Bend in Melbourne to its new modern laboratories at Clayton. His research interests in polymer science during this period continued unabated leading to many patents and publications including the books "Step Growth Polymerization" Marcel Dekker, Inc. (1972) and "Free Radical Polymerization", Pergamon Press (1995). In a well known series of papers he investigated the mechanisms of cyclopolymerizations and was responsible for the development of the idea that polymerization reactions

could be under kinetic control, not only thermodynamic control.

His industrial achievements are perhaps best exemplified by the **Australian Bicentennial Plastic \$10 Banknote** of which he was the principal inventor as well as project leader from the inception through to the technology transfer stage.

Following an external review of the School of Chemistry at the University of Melbourne, one of the oldest and largest in Australia, David Solomon was appointed as the inaugural ICI (Australia)-Masson Professor and Head of the School of Chemistry in 1990. He was charged with implementing the review's recommendations including reforming the three separate Departments of Inorganic, Organic and Physical Chemistry into a single Department and initiated major building, reequipment and staffing programs. He established a large and active research group involved in polymer synthesis, particularly the chemistry of Novolac resins and microgel formation, which continues to receive considerable funding from Government and industry sources.

David Solomon has served on many Boards and Committees. Some of these responsibilities include membership of the *Editorial Boards* of the *Journal of Macromolecular Science*, *Australian Journal of Chemistry* and *Polymer Bulletin*; the government established *Industry Research and Development Board*; and has been a Director of the *Sirocredit Board*, *Dunluna Board*, *Gradipore Ltd.* and *Unimelb Ltd.*

David Solomon has been a National President of the Royal Australian Chemical Institute (1979–80) and has at various times served as President of the Victorian Branch and Chairman of the Polymer Division. He has received many honors and awards including the Archibald D. Ollie Prize, the H.G. Smith Memorial Medal, Polymer Medal, the Applied Research Medal and the Leighton Memorial Medal of the Royal Australian Chemical Institute; the David Syme Research Prize; the CSIRO Medal; the Australian Bicentennial Science Achievement Award and, in 1994, the Clunies Ross National Science and Technology Award for the development of the plastic banknote technology. In his many public lectures he has always emphasized the need to direct efforts to

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develop export-oriented industries in Australia with much greater investment in research and development.

Solomon is a Fellow of the Royal Australian Chemical Institute (FRACI), a Fellow of the Australian Academy of Sciences (FAA), and a Foundation Fellow of the Australian Academy of Technological Sciences (FTSA). He was made a Member of the Order of Australia (AM) in 1990 for his contribution to science and technology, particularly in the field of polymer chemistry.

David Solomon retired at the end of 1994 as ICI (Australia)-Masson Professor of Chemistry and Head of the School of Chemistry at the University of Melbourne. Following his retirement as Head of School, David Solomon has been appointed as a Professorial Fellow in the School of Chemistry at the University of Melbourne and will continue his personal research programs in polymer science.

His wife, Val, and family will no doubt see more of him and there will be time to enjoy his farm outside of Melbourne where he raises a fine herd of Angus Beef cattle.

This article has been submitted by *Kenneth Ghiggino*, School of Chemistry, University of Melbourne, Melbourne, Australia and *Otto Vogl*, Herman F. Mark Professor of Polymer Science, Polytechnic University, Brooklyn NY.