

2009 Board of Trustees' Award for Outstanding Research and Creative Scholarship Recipient

Anthony G. Dixon

Professor Anthony G. Dixon is internationally recognized for his work in the theoretical and experimental investigation of transport processes in chemical reactors, attaining world-wide recognition for his work on heterogeneous catalytic fixed bed reactors. He has produced unique and pioneering work in applying computational fluid dynamics (CFD) to investigate the flow and heat transfer in packed chemical reactors. Professor Dixon's creativity, innovation, and leadership have helped to solve real-world industrial problems, and have also led to many publications in the most highly respected journals of chemical engineering.



Professor Dixon's scholarly record is remarkable; he has published a steady stream of peer-reviewed articles—nearly a hundred of them—in the leading journals in his field, and his work is often cited by other scholars. Professor Dixon was honored in 2001 with the William H. Corcoran Award for the best paper in Chemical Engineering Education. In 2008, Professor Dixon's work in chemical reaction engineering, investigating heat transfer in fixed beds, chemical reaction with diffusion, and applying computational fluid dynamics in fixed bed reactor analysis, was honored by the American Institute of Chemical Engineers, who elected him a Fellow of the Institute. This honor is granted to only the top 1% of the 40,000 members of the Institute.

A European colleague mentions that even before Professor Dixon attained his international standing for the application of computational fluid dynamics, he had already earned “a worldwide reputation for his work across a number of fields, including packed bed heat transfer, modeling, and membrane reactors.” Dixon “has consistently delivered extremely high quality work at the leading edge of applying CFD to solve real problems”; he “permanently stretches the boundaries of what we can achieve while never ceasing to question the validity of what we are doing.” Another international colleague notes that his “pioneering research on CFD on heterogeneously catalyzed reactions in tubular reactors...is really ground-breaking, and demonstrates Tony Dixon's creativity, thoroughness, and perseverance.” And another colleague writes that Professor Dixon's research “has had a deep and lasting impact on the major industrial end-users of fixed bed technology,” identifying Dixon as “the first person to attempt to construct a detailed CFD model for fixed beds that

completely resolves each individual pellet with a full description of the coupled heat and mass transport and catalytic reactions at the pellet surface.” Professor Dixon has provided “critical leadership in training the next generation of chemical reaction engineers,” and his service to the broader engineering community, “as evidenced by his work on editorial boards and other important committees, is outstanding.”

Dixon is, according to another professional colleague, not just a prolific researcher and scholar, but a “very exciting speaker,” a “genuine gentleman,” and a “fine human being.”

In recognition of his significant contributions to the field of Chemical Engineering, specifically his work in the area of heat transfer in packed beds and in inorganic membrane reactors, and the application of computational fluid dynamics to describe the fluid flow through unstructured and structured beds of particles, and his study of non-isothermal behavior during diffusion and reaction on inorganic membranes, it is with great pride that Professor Anthony G. Dixon is named the recipient of the 2009 Board of Trustees’ Award for Outstanding Research and Creative Scholarship.