

MICHAEL R. OVERCASH

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Dr. Overcash has developed an in-depth national research and development program in two distinctive areas. One of these areas is sustainability. In this field, he has helped organize the various models for sustainability used in research and sought the common characteristics of these models. Since sustainability is build on quantifying improvement, the integration of life cycle inventory is a central part of his sustainability research. Dr. Overcash also chaired subcommittees in two recent ANSI sustainability standards projects on carpet and on resilient flooring. He has also chaired the Material Assurance group in a recent NSF project to develop sustainability research concepts, entitled Complex Interacting Systems for a Sustainable Future. Dr. Overcash has also been the co-developer of a corporate sustainability program at Hawker Beechcraft, building an industrial collaboration to transition sustainability to a business environment. Thus he has contributed to the emergence of standards for sustainability of products as well as the need to define the leading edge research of this field.

The second of these is life cycle inventory research, developing the new areas for utilization of the life cycle tools. Life cycle is the principal tool of sustainability. Dr. Overcash has led the effort in life cycle inventory techniques using the design-based methodology. The resulting database of about 600 chemical and materials manufacturing plants is based on a heuristics approach around unit processes. In addition his work has focused on the fundamental chemical and mechanical constraints on recycle/reuse and the link to life cycle in product manufacture and economics of production efficiency. Dr. Overcash has contributed to life cycle studies in green energy production with wind generation, structural products for packaging (including recycled materials), carpets, medical textiles, pharmaceuticals, solvents, and various polymer products. He has recently initiated the expansion of a design-based methodology to product manufacturing, including the heuristics for unit processes. Dr. Overcash has been active in European life cycle efforts and peer reviews of research in this field.

His professional contributions include fourteen books, over 330 articles for journals, symposia, and reports, and service on seven National Academy of Science committees. He has also served on scientific advisory committees for the Air Force, State of North Carolina, the National Science Foundation, several offices of EPA, and corporate research and planning groups. Dr. Overcash has pioneered the research field in industrial pollution prevention since 1980. His role as Director of the Office of Exploratory Research Center for Waste Minimization (EPA) allowed the development of critical research and new technology projects that define the research in the pollution prevention field.

Michael R. Overcash graduated with a B. S. degree in Chemical Engineering from

North Carolina State University. He earned an M. S. degree in the same field while on a Fulbright Scholarship at the University of New South Wales, Sydney, Australia. He received his Ph.D. from the University of Minnesota in Chemical Engineering.

Dr. Overcash served as a Professor of Chemical Engineering, as well as a Professor of Biological and Agricultural Engineering at North Carolina State University. He has received the Young Researcher Award from the American Society of Agricultural Engineers, the 1990 Environment Award of the American Institute of Chemical Engineers, and the EPA Distinguished Visiting Scientist Award.