

## Professor Jose M. Castro

Professor Integrated Systems Engineering and Director Center for Advanced Polymers and Composites Engineering (CAPCE)  
1971 Neil Ave / 22 Baker Systems  
Columbus, OH 43210, USA  
Tel: (614) 292-7852 Fax: (614) 668-8233  
e-mail: [castro.38@osu.edu](mailto:castro.38@osu.edu)



### Experience Highlights

- 17 Years industry Experience
- 16 years Univ. R&D
- 150+ publications
- SPE Fellow, IOP Fellow  
Recipient of various awards

### Experience Summary

Jose M Castro is currently a professor in the Department of Integrated Systems Engineering and director of the Center for Advanced Polymers and Composites Engineering at The Ohio State University. After obtaining his PhD in Chemical Engineering from the University of Minnesota in 1980, he was a faculty at the chemical engineering department of the University of the South in Bahia Blanca Argentina for four years. He then worked at the Gen Corp corporate technology center for 12 years in automotive composites where he was a chief technologist for Composites Manufacturing. After GenCorp he worked for three years as Manager of the New Process technology group in Allied Signal Electronic Materials. He joined Ohio State in September 1998. He has published more than 80 peer review journal papers, many technical meeting papers and given numerous invited talks. His area of research is polymer processing and composites manufacturing modeling and optimization. He is a fellow of the Society of Plastics Engineers and the Institute of Physics.

### Research Areas

- **In mold coating (IMC)** is the Environmentally Friendly manufacturing alternative to priming and painting. It is commonly used in composites manufacturing. We have been working with OMNOVA Solutions to implement this technology to injection molded thermoplastics. Research on material/process optimization focuses on lowering the required process temperature, as well as increasing the material conductivity.
- **Light Weight Composites Manufacturing.** Adding nanoparticles improves the mechanical properties but has a detrimental effect on manufacturability, measured by the decrease in permeability of the preform. A balance has to be made between property improvement and decrease in processability. **Surface nanotailoring.** Due to the difficulty of adding more than a few percent nanoparticles, we have focused our effort on locating the nanoparticles where they are most needed that is for surface protection and of for providing conductivity. We have developed two approaches one is preform spray and the second is nanopaper manufacturing.
- **New process development,** we have developed a new process to decrease the cycle time of injection molding parts while improving dimensional stability. Its industrial competitor is Micro cellular injection molding (MUCELL). We are developing in collaboration with OMNOVA Solutions a new approach to make thermoplastic parts conductive using nanopaper in mold coating.

