

TUAN M. DAO

BACKGROUND SUMMARY

Technical Consultant with over 24 years of proven expertise in project management, plastic materials selection, injection molding process optimization, tool/mold design, runnerless technology, plastic part design and finite element analysis. Championed in productivity improvements by applying Six Sigma methodologies at key accounts to improve productivity averaging \$2MM annually. Established track record for providing engineering solutions to development of new products from concept through commercialization. Multi-tasked with good skills in project management. Excellent team player with excellent communication and organization skills. Six Sigma Green Belt certification.

TECHNICAL SKILLS

Part Design: Thin wall, tight tolerance, finite element analysis (FEA)
Molding: Optimum molding, de-coupled (scientific) molding, runnerless molding.
Tooling: Mold Design, Runnerless Molds (insulated, hot runner and hybrids)
Prototyping: Rapid prototyping, reverse engineering

COMPUTER LANGUAGES AND ADVANCED SOFTWARE EXPERIENCE:

Languages: C/C++, Visual Basic, VB.Net, FORTRAN, HTML, JavaScript.
FEA Softwares: I-DEAS, ANSYS, COSMOS, PASTRAN, NASTRAN, ABAQUS.
Softwares: MOLDFLOW, MATLAB, MINITAB, AutoCAD, ProEngineer, SolidWorks.

CAREER HISTORY

Polymer Engineering Group, Yorba Linda, CA **2004 - Present**
President and Principal Consultant

Provide customized consulting services to the plastic industry. Expertise includes Product Design and Development, Finite Element Analysis (FEA), Mold Design, Process Troubleshooting and Optimization, Failure Analysis, Productivity Improvement.

E.I. du Pont de Nemours & Company (Inc.), Wilmington, DE **1981-2004**

A \$27 billion in sales global company, a major manufacturer of chemicals, plastics, and agricultural products.

Engineering Polymers Division: **2000-2004**
Technical Consultant.

Directed and led technical support activities for DuPont west sales and marketing. Provided technical assistance to major accounts in the west. Responsibilities included product design review and finite element analysis, setting up technical programs for productivity improvement,

hot runner selection and drop design, hot runner trouble shooting, process optimization. Rapid prototyping and reverse engineering.

- reviewing mold design, hot runner Developed and commercialized a 20" bicycle wheel utilizing lost core technology at X-core Company.
- Provided technical leadership, molding and mold design (hot runner) support in the Tahoe Sprinklers Project at Hunter Industries resulting in a potential additional 750M lbs in Zytel® nylon and Delrin® acetal resins sales for DuPont.
- Applied Six Sigma methodologies at Toro Irrigation to improve its productivity by 20%, a net savings of \$500M in two years of molding operation.
- Conducted 15 training seminars per year to key customers in the west in part design, finite element analysis, optimum molding, hot runner mold design, screw design, materials selection, and failure analysis.
- Selected as guest speaker in the areas of hot runner, sequential valve gating, optimum molding at DuPont's Technical Conferences in Wilmington, DE and Troy, MI. (1997-2003)

Engineering Polymers Division: 1995-2000
Senior Technical/Marketing Specialist

Responsible for Sales and Development for all direct accounts and was a business steward for the Irrigation Market Segment.

- Increased DuPont's Sales to Irrigation market by 15% by introducing better chlorine resistant materials to new sprinklers and valves.
- Provided technical and marketing support for the development and commercialization of V-75 Sprinklers product line at Toro Company.
- Leading technical effort and support at Hunter Industries to improve molding productivity and molding safety.
- Provided training seminars to molding personnel at Toro and Hunter in materials handling, optimum molding, trouble shooting and failure analysis.

Engineering Polymers Division 1987-1995
Technical Specialist

Assigned to DuPont's west coast, Sales and Development. Responsible for regional technical support. Performed product design, finite element analysis, mold design, runnerless molding, material selection, failure analysis and mold flow simulation for major accounts in the west coast.

Engineering Plastic Materials Division 1981-1987
Field Engineer

Responsible for the characterization of all newly developed crystalline polymers prior to commercialization to market. Conducted chemical resistance program of all DuPont's engineering plastics. Provided technical support to customers in the Southeast region, duties included molding, trouble shooting, and product design.

AWARDS

Profile of Excellence Awards: 1989, 1991, 1992, 1994, 1995

Winning Spirit Award: 2003

TEACHING EXPERIENCE

**University of California, San Diego.
UCSD Extension**

2005 - Present

Instructor, Plastic Engineering Product Design I and II

Prepare lectures and teach these two 9 week-classes. Topics include Fundamentals of Product Design, Plastics versus Metals, Principles of Part Design, Tooling and Molding Considerations in Part Design. Creep and Relaxation in Design, Factor of Safety, Dimensional Analysis, Design for Assembly: Snap-fit, Press-fit, Fasteners, Ultrasonic, Vibration Welding, Heat Staking, Prototyping....

EDUCATION

- BChE – Chemical Engineering, University of Minnesota
- MSE – Mechanical Engineering Interdisciplinary, California State University – Long Beach.

PROFESSIONAL DEVELOPMENT

- Linear Finite Element Analysis – Cal State University Long Beach (CSULB)
- Non Linear Finite Element of Complex Structures and Mechanisms – CSULB
- Stress Analysis in Design – CSULB
- Advanced Hot Runner Molding – Mold Masters
- Plastic Injection Mold Design Basics and Advanced – University of Wisconsin, Milwaukee
- The New Sales Professional – DuPont Company
- Negotiation Workshop – DuPont Company
- Six Sigma Training (Green Belt Certification) – DuPont Company.

AFFILIATION

Society of Plastics Engineers (SPE): Senior member