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United States citizen

EXPERIENCE

10/05 – Present TechnipFMC Houston, TX
Senior Manager, Core Technologies and Multiphysics – Technology and R&D
- Managing 13 direct reports to supply high end engineering analysis, software development, and high performance computing.
- Subject matter expert in fatigue, fracture mechanics, FEA, and riser analysis.

8/11 - Present University of Houston Houston, TX
Adjunct Professor - Subsea Engineering and Mechanical Engineering
- Teach courses in Machine Design, Design for Oil and Gas, and Riser System Design

1/07 - 6/11 ITT Technical Institute Houston, TX
Lecturer – Computer Design and Drafting
- Teach mechanical course in the Computer Design and Drafting and Construction Management departments.

7/01 - 9/05 ExxonMobil – Upstream Research Houston, TX
Senior Research Engineer – Well Construction
- Investigated mechanics of rock cutting.
- Qualified torque reduction drill string components and drilling fluid additives for horizontal, extended-reach wells.
- Developed design concept for high pressure, cryogenic containment system for transport of liquid natural gas aboard ocean-going vessels.

1/01 - 4/01 Wayne State University Detroit, Michigan
Adjunct Professor
- Developed and taught new graduate course on analysis of sheet metal forming.

11/99 - 7/01 General Motors – Metal Fabrication Troy, MI
Senior Manufacturing Engineer – Formability Analysis
- Validated sheet metal forming die designs using computer simulation.
- Verified quality standards in the engineering of stamping die lines.

6/95 - 10/99 Research Center for Net Shape Manufacturing Columbus, Ohio
Staff Engineer – Stamping Team Leader
- Managed $750k research and development project co-funded by NIST and the automotive industry.
- Led team of researchers and analysts to investigate manufacturing issues.
- Developed and taught several courses and workshops in manufacturing and metal forming.

6/90 - 6/95 Modern Tool and Die Cleveland, Ohio
Student Engineer – Cooperative Education
- Process engineer for stamping, compression molding, resistance welding and arc welding.
- Developed process diagrams for hydraulics and pneumatic manufacturing systems.
- Computer programmer, quality control engineer, and computer aided designer.
- Constructed and repaired machines and stamping dies.

EDUCATION

3/97-12/99 Ohio State University Columbus, OH
- Doctorate – Mechanical Engineering.
- Developed and optimized real-time control system for sheet metal forming processes.
- GPA: 3.76 / 4.00. Graduated Magna Cum Laude.

6/95-3/97 Ohio State University Columbus, OH
- Master's Degree – Mechanical Engineering.
- Conducted experiments and analyses of advanced metal forming techniques.
- GPA: 3.74 / 4.00. Graduated Magna Cum Laude.
- Awarded Fellowship.

6/90-6/95 Kettering University Flint, MI
- Bachelor's Degree – Mechanical Engineering.
- Optimized process for fiber-reinforced, thermoplastic molding production line.
- GPA: 94.3 / 100. Graduated Magna Cum Laude.
- Awarded Rotary Club Scholarship.

SKILLS / QUALIFICATIONS

Top Tensioned Riser Design and Analysis
- Global and Component Analysis with FlexComm and OrcaFlex.
- Wave and Current Loading of Offshore Structures
- Vortex Induced Vibration

Oil and Gas Engineering
- Pressure vessel design (ASME Section VIII) and piping design (ASME B31.3).
- Casing design, drilling fluids, bit mechanics, and well control.
- Shipping optimization, mooring selection, and offshore cargo offloading.

Stress Analysis and Structural Design
- Structural finite element analysis with Abaqus and Ansys.
- Fatigue and Fracture Mechanics with Fracture Graphic and Crackwise.
- Metal forming simulation with Pamstamp and Dynaform.

Computer Aided Design
- Unigraphics, ProEngineer, I-DEAS, and AutoCAD.

Teaching, Presentation and Publication
- Teach three university courses and delivered one keynote speech.
- Published 20 papers and contributed 2 encyclopedia sections.

RESEARCH INTERESTS
- Failure prediction.
- Metal forming and manufacturing.
- Drilling geomechanics.
- Cryogenic containment design.

AWARDS / HONORS
- PVPD Conference Award - Outstanding Technical Paper, HPHT Committee. 2016.
- Keynote Speaker. Ansys Convergence Conference. Houston, 2015.
- Graduated Magna Cum Laude – Ohio State University – 1999
- Keynote Paper – 6th International Conference on Technology of Plasticity – 1999
- Graduated Magna Cum Laude – Ohio State University – 1997

- Fellowship Awardee – Ohio State University – 1995
- Graduated Magna Cum Laude – Kettering University – 1995
- Rotary Club Scholarship – North Ridgeville, Ohio – 1990

AFFILIATIONS

• 10/2016	Subsea Engineering Society	Adviser
• 10/2016	Society of Underwater Technology	Adviser
• 6/2016	Society Mechanical Engineers	Member
• 6/2005	Society of Petroleum Engineers	Member
• 6/1999	Society of Automotive Engineers	Member
• 3/1999	Mensa International	Member
• 4/1996	Phi Delta Theta Fraternity	Alumni, Former Officer
• 12/1993	Tau Beta Pi Honor Society	Selected Inductee

PUBLICATIONS

- Two Patent Pending for a smart elastomer seal and torque reducing valve actuator.

- Karpanan, K; Thomas, W. (2018) Modification to ASME VIII-3 Fatigue analysis Mean Stress correction. Proceedings of the ASME 2018 Pressure Vessels & Piping Conference.

- Lee, S; Thomas, W. (2017) Assessment of Ductile Tearing Instability In a Cracked Pressure Containing Equipment. NAFEMS World Congress 2017.

- Contributed two sections in the upcoming Encyclopedia of Marine and Offshore Engineering, Wiley and Sons, to be published December 2017.

- Karpanan, K; Thomas, W. (2016) Critical Plane Search Method for ASME Sec-VIII Div-3 Fatigue Analysis. Journal of Pressure Vessel Technology. PVT-16-1174

- Karpanan, K; Thomas, W. (2015) ASME Sec VIII Div 3 Fatigue Life Predictions Using Critical Plane Approach. Proceedings of the ASME 2015 Pressure Vessels & Piping Conference. PVP2015-45045

- Thomas, W; Karpanan. (2014) Local Failure Analysis of HPHT Subsea Tree Components Due to Triaxial Stress. Proceedings of the ASME 2014 Pressure Vessels & Piping Division Conference. PVP2014-28722.

- Fan, B., Thomas, W. (2013) Weather Window Determination of Top Tensioned Riser Deployment with Guidewires. Proceedings of the ASME 2013 32nd International Conference on Ocean, Offshore, and Arctic Engineering (OMAE). June 9-14. Nantes, France. Paper OMAE2013-11083.

- Schamp, J. H., Estes, B. L., Keller, S. R., Thomas, W. J. (2006) Torque Reduction Techniques in Extended Reach Directional Wells. Proceedings of IADC/SPE Drilling Conference, Feb 21-23, Miami, Florida. Society of Petroleum Engineers. Paper #98969.

- O'Donnell, J. R., Rigby, J. R., Thomas, W. J., Healy, B. E. (2003) Support Systems for Containers On-Board a Marine Vessel. United State Patent Application #60/459,204.

- Thomas, W. (2000) Validating Computer Simulation Through Soft and Hard Die Tryout of a Fender Outer. International Conference on Advances in Stamping. Dearborn, MI. Society of Manufacturing Engineers. April 12, 13.

- Thomas, W., Altan, T. (2000) Part and Process Design Methodology for Deep Drawing and Stamping of Sheet Metals. Ph.D. Dissertation. The Ohio State University. Columbus, Ohio.

- Thomas, W., Vazquez, V., Koc, M., Altan, T. (1999) Simulation of Metal Forming Processes - Applications and Future Trends. Proceedings of the 6th International Conference on Technology of Plasticity. September 19-23. Nuremberg, Germany.

- Thomas, W., Johnson, G., Altan, T. (1999) Improving the Formability of Aluminum Alloy 3003-H14 With Computer Simulation. Keynote Paper. Proceedings of the 6th International Conference on Technology of Plasticity. September 19-23. Nuremberg, Germany.

- Thomas, W., Oenoki, T., Altan, T. (1999) Process Simulation In Stamping - Recent Applications for Product and Process Design. Special Issue of the Journal of Materials Processing Technology. Highlights of the 3rd Int'l Conference on Sheet Metal Forming Technology. Columbus, OH. October 3-5, 1998. Elsevier.

- Thomas, W., Oenoki, T., Altan, T. (1999) Implementing FEM Simulation into the Concept to Product Process. 1999 SAE International Congress. 12th Session on Sheet Metal Stamping (jointly sponsored by NADDRG). March 1-4. Detroit, MI. No. 99M-176.

- Thomas, W., Altan, T. (1998) Regular R&D Update Column of the Stamping Journal. Fabricators and Manufacturers Association International.

- Thomas, W., Oenoki, T., Altan, T. (1998) Process Simulation In Stamping - Recent Applications for Product and Process Design. Proceedings of the 3rd Int'l Conference on Sheet Metal Forming Technology. Columbus, OH. October 3-5, 1998. Fabricators and Manufacturers Association International.

- Thomas, W. Altan, T. (1998) Application of Computer Modeling in Part, Die, and Process Design for Manufacturing of Automotive Stampings. Steel Research. Vol. 69. No. 4, 5. Verein Deutscher Eisenhuttenleute. Max-Plank Institute.

- Thomas, W. Altan, T. (1998) Applying Computer Simulation to Automotive Part Stamping. The Fabricator. February, 1998. Fabricators and Manufacturers Association International.

- Diller, M., Thomas, W., Ahmetoglu, M., Akgerman, N., Altan, T. (1997) Applications of Computer Simulations for Part and Process Design for Automotive Stampings. SAE International Congress. Feb. 24-27, 1997. No. 970985.

- Thomas, W., Kinzel, G. Altan, T. (1997) Improving the Deep Drawability of 2008-T4 Aluminum and 1008 AKDQ EG Steel Sheet with Location Variable Blank Holder Force Control. M.S. Thesis. The Ohio State University. Columbus, OH.

- Thomas, W., Erevelles, W. Sullivan, L. (1995) Implementation and Automation of a Composite Extrusion System. B.S. Thesis. Kettering University. Flint, MI.

REFERENCES

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