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EDUCATION	Stanford University Palo Alto, CA Ph.D., Materials Science & Engineering, 1988. Dissertation: Superplasticity and Stability in Ultrahigh Carbon Steel Laminates, Advisor: Prof. Oleg D. Sherby, Defended November, 1987
	Stanford University Palo Alto, CA M.S., Materials Science & Engineering, 1985.
	Northwestern University Evanston, IL B.S. (departmental honors), Materials Science & Engineering, 1983. Research w/Prof. M.E. Fine; Fatigue initiation in polished & oxidized steel College-wide Gotaas Award for outstanding undergraduate research
EXPERIENCE	Director/PI – NSF HAMMER ERC The Ohio State University 9/22 -- present Built 5-university team, proposed and initiated National Science Foundation Engineering Research Center on Hybrid Autonomous Manufacturing – Moving from Evolution to Revolution (HAMMER). Base award: \$26M/5 years, renewable, industry and other supplements expected.
11/87 -- present	Professor (1996-pres) Associate, Assistant The Ohio State University Teaching and research focus on mechanical behavior and processing of structural materials. Focus areas are high velocity sheet metal forming, novel manufacturing processes and mechanical behavior of composites
4/11 – 7/15	Executive Director Honda-Ohio State Partnership Program Led Joint Planning Team of Honda and Ohio State personnel to invest proceeds from a \$40M+ endowment in the areas of student development, research and outreach
10/20 -- present	Co-Founder Applied Impulse, Inc., Columbus OH Company to commercialize impulse manufacturing technologies for welding, joining, forming, and other operations. appliedimpulseinc.com
7/04 -- 10/07	Co-Founder/VP Tech. Excera Materials, Worthington, OH Co-founder (1993) developer/manufacturer ceramic composites by reactive processing. Sabbatical in 04-05 academic year. Ohio State-based technology now commercialized by Fireline, Inc. and Rex Materials Group.
1/97 -- 7/97	Visiting Scientist Rockwell Int'l Sci Ctr., Thousand Oaks, CA Sabbatical period; engaged in manufacturing and materials performance projects
9/83 -- 11/87	Research Assistant. Stanford University, Palo Alto, CA Dissertation under Oleg D. Sherby: laminated composites of superplastic ultrahigh carbon steel and stainless steel.

APPOINTMENTS AND LEADERSHIP ROLES

Long-term commitments to engaged scholarship in the related areas of manufacturing technical ecosystems and public policy as well as K-12 materials science education. Brief descriptions of activities and leadership roles are discussed below.

ADDITIONAL PRIMARY APPOINTMENTS (>30%)

2022-	<hr/> Principal Investigator / Director; NSF HAMMER ERC Starting in 2019, led the process of team formation and proposal planning with colleagues at North Carolina Agricultural and Technical State University, Case Western University, University of Tennessee and Northwestern University to win a highly competitive National Science Foundation Engineering Research Center. The title and topic is HAMMER – Hybrid Autonomous Manufacturing Moving from Evolution to Revolution. With renewal the 5-year \$26M award, will have a 10-year lifespan and at least \$52M in federal investment. The program has mandated elements in convergent research, engineering workforce development, culture of equity and inclusion and an innovation ecosystem. This should act as a catalyst for new programs and business structures at the university. One innovative structure being developed is an allied 501(c)(3) for to aggregate, mature and commercialize technology from the alliance. Together, the goals of this program are fully aligned with the Land Grant mission of the University. See hammer.osu.edu . <hr/>
2011 - 2015	<hr/> Executive Director; Honda-Ohio State Partnership Program Led Joint Planning Team of Honda and Ohio State personnel to invest proceeds from a \$40M+ endowment in the areas of student development, from K to postgraduate, research and outreach. The partnership also recognized STEM talent and improved the pipeline through the inclusive Math Medal program at Ohio high schools. Investments during this period helped establish the hands-on sophomore sequence in Mechanical Engineering and provided a foundation for the Electric Motorcycle Team at CAR. The concept for Ohio State's Center for Design and Manufacturing Excellence (CDME) was developed and set in motion through the Partnership during this period.

MANUFACTURING INITIATIVES

Played critical roles in forming Ohio State's signature manufacturing programs including initiating the Ohio Manufacturing Institute, co-developing the plans for the Center for Design and Manufacturing Excellence and the light Metals Manufacturing USA Institute, LIFT.

2022	Principal Investigator / Director; NSF HAMMER ERC This initiative, described on the previous page can be traced directly to insights and activities in the programs described below.
2018	Metamorphic Manufacturing Study Committee Lead Technical Lead, ONR-sponsored, TMS-organized national study on the future for <i>Metamorphic Manufacturing</i> . Team of 14 experts organized for 18-month study to guide federal investment. (link to study). This provided foundational ideas for HAMMER
2017 - 2020	IMR Associate Director Manufacturing Initiatives Associate Director, Director of Manufacturing Initiatives (20% appointment), Institute for Materials Research.
2016 - 2020	Discovery Theme Initiative: Materials & Manufacturing for Sustainability Worked with IMR Director Steve Ringel to develop Materials and Manufacturing for sustainability cluster hire through Discovery Theme initiative.
2015 - 2020	MForesight, Executive Committee and Leadership Council Executive Committee of Leadership Council, MForesight, public-private voice of U.S. Advanced Manufacturing to policy makers (mforesight.org). MForesight reports played role in Federal Manufacturing policy supporting the CHIPS & Science act of '22
2010 - 2017	Ohio Manufacturing Institute, Founding Director Founding Director and varied roles over time, Ohio Manufacturing Institute (omi.osu.edu) since June 2017, plays support role as Kathryn Kelly directs to implement programs such as B.S. in Engineering Technology led at regional campuses
2014 -2018	Center for Design and Manufacturing Excellence, Chief Technologist While in primary role as faculty member provided continuity and found facilities for the Center for Design and Manufacturing Excellence, co-hired and worked with directors Dr. Kimmet, John Bair and Nate Ames.
2014 -2018	Lightweight Innovations for Tomorrow (LIFT), Manufacturing USA Institute Founding Team OSU Principal Investigator and Technical Pillar Lead, Agile and Low-Cost Tooling, Lightweight Innovations for Tomorrow (LIFT, lift.technology), National Network of Manufacturing Innovation (NNMI) Institutes. Led OSU writing of \$70M winning proposal for federal investment to OSU, EWI University of Michigan team. This organization \$10M in research funding to OSU over period.
2008 -	International Impulse Forming Group (I2FG.org) Founding Vice-Chair With Prof. Erman Tekkaya to establish enduring organization to promote Impulse forming

K-12 EDUCATION

In 2006 helped organize OSU's first Materials Camp for Teachers has been an advocate this important program organized by ASM the Materials Education Foundation. Since this time, he has been quite active in developing and deploying materials for the professional development of K-14 teachers.

2018-2021	Chair, ASM Materials Education Foundation , The Foundation's mission is to excite and engage students in materials and STEM. Its flagship program is it's Materials Camp for teachers. About \$1.5M annually on support of programs from an endowment of approximately \$15M. Over my term the endowment grew by about \$5M and new fundraising and educational programs deployed.
2016-2018	Vice Chair, ASM Materials Education Foundation
2017 - 2020	STEM Scouts Chemical and Advanced Materials STEM Advisory Committee
2012-14	Math Science Partnership Program , program lead (2-year Ohio Dept of Ed funded) Led (with significant input from Howard Greene, Michelle McComb and Kathy Babusc) holistic STEM teacher professional development exercise, including summer camp and periodic academic year meetings to use materials science as a STEM catalyst. Teachers were from Columbus, Springfield and other regional schools. At least 6 continue to provide further professional development as ASM Master Teachers. This program was widely regarded as a success to be modeled and replicated.
2010 -	Member, Board of Trustees, ASM Materials Education Foundation
2007 -	Organizer of numerous Materials Camps for Teachers at Ohio State These camps provide 20-30 K-12 teachers 40-hours of instruction from ASM Materials Foundation Master Teachers, with insight from the host institution. This program has been a catalyst to the formation of many high school materials science high school courses, now in tens of buildings in the Columbus, Cleveland and Cincinnati area. First programs were at Westerville South and Trotwood-Madison in 2008. Next camp scheduled for week of June 12, 2022 in new Fontana facilities at OSU.

INTERNATIONAL CONFERENCE ORGANIZATION AND EXECUTION

July 2020/2021	Conference Chair, Int'l Conf. on the Technology of Plasticity (ICTP) , Planned Columbus, Ohio, 2020. Moved by Pandemic to July 25-30, 2021 (397 delegates, 2979 page conference proceedings published)
October 2018	Conference Chair, International Cold Forging Research Group , Columbus, Ohio (80 attendees)
May 2018	Conference Chair, International Conference on High Speed Forming , Columbus, OH (90 attendees, published proceedings)
April 2010	Conference Chair, International Conference on High Speed Forming , Columbus, OH (93 attendees, published proceedings)

SIGNIFICANT AWARDS AND RECOGNITIONS

2022	ASM Gold Medal
2021	Maj Gen Marcelite Harris Trailblazer Award of Logistics Officer Association (US Air Force), recognizing Metamorphic Manufacturing
2020	C.S. Barrett Medal from the ASM Rocky Mountain Chapter
2020	2020 Technology Commercialization Award, from Ohio Faculty Council
2018	Engineering Dean's award for Distinguished Outreach Achievements
2017	Honda-Ohio State Partnership Award, Ohio State College of Engineering
'92, '00, '04	Lumley Research Award of Ohio State University College of Engineering
2010	Fellow ASM International
2009	Innovators Award of Ohio State College of Engineering
2007	ASM Jacquet-Lucas Award for Excellence in Metallography
1995	Mars G. Fontana Professor of Metallurgical Engineering
1992	Robert Lansing Hardy Gold Medal of TMS, recognizing outstanding promise in the broad field of metallurgy
1990	ASM Marcus A. Grossmann Young Author Award, for "Deformation of Whisker-Reinforced MMC's Under Changing Temperature Conditions"

NATIONAL RESEARCH AWARDS

1992	National Young Investigator of National Science Foundation
1992	Army Research Office Young Investigator Award

GOVERNANCE BOARD APPOINTMENTS

2022-	Edward Orton Jr. Ceramic Foundation One of 5 members of board of trustees that oversees operations, guides philanthropic investments and evaluates management team.
2010 -	ASM Materials Education Foundation Served in all roles of member of large board of trustees (~15), and rotated through executive committee nominal 2-year terms as Vice Chair, Chair (3-year term), Immediate Past Chair. Set direction, evaluated and restructured management team. During tenure on board, Foundation has greatly expanded its reach in K-12 education and set foundation for \$8M capital campaign.

OTHER SIGNIFICANT ACTIVITIES

2017 - 2020	Member, Ohio State University Committee on Intellectual Property Patents and Copyrights
2015 - 2016	Member, National Academies Panel on Mechanical Science and Engineering, Review panel for Army Research Laboratory
2011 - 2020	Senior Fellow, Center for Automotive Research, Ohio State University
2010 - 2012	Chair, International Impulse Forming Group, Vice-Chair 2012-2014
2002 - 2003	Member National Research Council Committee on “Use of Lightweight Materials in 21 st Century Army Trucks”
1996	One of 13 invited speakers at second National Academy of Engineering Frontier of Engineering Meeting
1995-1997	Chair, TMS Shaping and Forming Committee

MAJOR RESEARCH THEMES & ACCOMPLISHMENTS (a guide to the publications)

IMPULSE MANUFACTURING (1989 – PRESENT)

Prof. Daehn's first project at Ohio State was in manufacturing and electrohydraulic forming of thin tubular cylinders. There was almost no work in high strain-rate manufacturing at this time and we discovered superplastic-like ductility at high strain rates. Since this time, interest in this work has grown worldwide and Daehn has been continually active in the leadership of the International Impulse Forming Group. Now Ohio State has leading facilities in impulse processing using electrohydraulic, electromagnetic, laser-impulse and vaporizing foil actuator processing (which was developed & patented wholly at Ohio State). Daehn's group has executed over \$10M in research in this area, and the technology is being examined by several auto OEM's and others for welding dissimilar and advanced metals by impact, without gross melting. Details on these activities can be found at the impulse manufacturing lab webpage (iml.osu.edu) and the International Impulse Forming Group page (i2fg.org).

METAMORPHIC AND AGILE MANUFACTURING (2014 – PRESENT)

The newest area of research asks the question – can we create a robotic system that has the key elements of a human blacksmith, but with much greater strength, better sensing and much better reproducibility. This digital reshaping is the natural progression following digital material removal (CNC machining) and digital material addition (additive manufacturing). This idea has been embraced by the LIFT institute and is the subject of a forthcoming national expert study chaired by Daehn.

STRAIN MISMATCH EFFECTS IN PLASTICITY (PRIMARY PERIOD: 1985-2005)

While at Stanford, Daehn developed an original model for the thermal-cycling enhanced creep of metal matrix composites that were being studied in the group of his advisor, Oleg Sherby. This was explained in early papers by Daehn (winning the ASM Marcus A. Grossman Young Author in 1990). Since that time research was carried out to understand the effect strain mismatch may have in increasing creep rates, and the method was used to enhance metal forming (via Mismatch Induced Plasticity) and for enhanced composite powder processing.

PROCESSING OF CERAMIC-METAL COMPOSITES (PRIMARY PERIOD: 1991-2007)

Inspired by an undergraduate project, Daehn became involved in a new process to create ceramic-metal composites via displacement reactions. These composites were tailored in structure and properties for a variety of applications and saw significant development as possible liquid-metal-tolerant materials for foundry applications and high-hardness strike faces for armor. The technology saw significant commercial development under a startup company that Daehn co-founded and the base ideas are still seeing active private R&D.

THEORY OF CREEP AND TIME DEPENDENT PLASTICITY (2000-PRESENT)

As a largely unfunded side project Daehn has worked with alternative theories of creep deformation and has a new approach that is based largely on the coarsening of fields of attractive obstacles. This can recover a range of creep phenomena, and gives the familiar five-power law of strain rate and stress using only data measured from non-creep experiments.

2023

"Augmented Laser Impact Welding", Brian Thurston, Anupam Vivek and Glenn S. Daehn, in Press, *Journal of Materials Engineering and Performance*.

"Shock Effects on the Upper Limit of the Collision Weld Process Window", Blake Barnett, Anupam Vivek, Glenn Daehn, in press, *Advances in Manufacturing*.

"Environmentally Responsible Lightweight Passenger Vehicle Design and Manufacturing", Glenn S. Daehn, Katrin E. Daehn, Oliver Kuttner, *Automotive Innovation* (2023).
<https://doi.org/10.1007/s42154-023-00241-4>.

"Workflow for Robotic Point-of-Care Manufacturing of Personalized Maxillofacial Graft Fixation Hardware", Javier Vazquez-Armendariz, Luis H. Olivas-Alanis, Tobias Mahan, Ciro A. Rodriguez, Michael Groeber, Stephen Niezgoda, Jonathan M. Morris, Hany Emam, Roman Skoracki, Jian Cao, Beth Ripley, Joseph Iaquinto, Glenn Daehn & David Dean, *Integrating Materials and Manufacturing Innovation*", (2023) <https://doi.org/10.1007/s40192-023-00298-3>

"Designing of a Field Shaper for Electromagnetic Crimping of Multi-Tube-Tube and Multi-Tube-Rod in Single Discharge Energy", A. Rajak, A. Vivek and G. S. Daehn, *J. Manuf. Sci. & Eng.*, Feb 2023, 145(2): 021007 <https://doi.org/10.1115/1.4055322>

"Advanced Manufacturing: Navigating the Path Forward", W. E. Frazier, J. Beuth, G. S. Daehn, D. U. Furrer, M. Maher and S. D. Henry, *Adv. Mater. & Proc.*, January/February 2023.

2022

"High Strength Micro Impact Welding of NiTi Wire to Brass Sheet", J. Li, Y. Mao, A. Vivek, B. Pantan and G. S. Daehn, in press *Welding in the World*, **66**, 1799-18089 (2022),
<https://doi.org/10.1007/s40194-022-01336-y>

"Small Scale Impact Welding of High Strength Aluminum Alloys: Process and Properties", Brian P. Thurston, Daniel R. Klenosky, Heath E. Misak, Anupam Vivek, Glenn S. Daehn *J. Mater. Eng. & Perf.*(2022). <https://doi.org/10.1007/s11665-022-07159-8>

"Design of a Field Shaper for Electromagnetic Crimping of Multi-Tube-Tube and Multi-Tube-Rod in a Single Discharge", A. Rajak, A. Vivek and G. S. Daehn, *J. Manuf. Sci & Eng.*, **142** (2022). <https://doi.org/10.1115/1.4055322>

“Pressure Amplification and Modelization in Laser Shock Peening of Ti-6Al-4V and AA7085 with Adhesive-Backed Opaque Overlays”, Stanley Bovid, Micheal Kattoura, Allan Clauer, Anupam Vivek, Glenn Daehn, Stephen Niezgoda, *J. Mater. Proc. Tech.*, **299**, (2022). <https://doi.org/10.1016/j.jmatprotec.2021.117381>

2021

“High Strength Impact Welding of 7075Al to a SiC-Reinforced Aluminum Metal Matrix Composite”, Y. Mao, J. Li, A. Vivek and G. S. Daehn, *Materials Letters*, **303** 130549. <https://doi.org/10.1016/j.matlet.2021.130549>

“High Strength and Fatigue Resistant Welds in NiTi and Brass by Impact Welding”, J. Li, B. Panton, Y. Mao, A. Vivek and G. Daehn, Submitted to *Welding in the World*, March 20, 2021, <https://doi.org/10.21203/rs.3.rs-973576/v1>

“Improved properties and thermal stability of a titanium-stainless steel solid-state weld with a niobium interlayer” J. Li, A. Vivek and G. S. Daehn, *J. Mater. Sci. & Tech.*, **29**, pp 191-204, 2021. <https://doi.org/10.1016/j.jmst.2020.11.050>

“High Strength Impact Welding of HSLA 340 to Al 5754 and Application Prototype”, Yu Mao, Brian Thurson, Jianxiong Li, Anupam Vivek, Glenn Daehn, Conference Proceedings from 9th International Conference on High-Speed Forming, October 2021, (virtual). https://eldorado.tu-dortmund.de/bitstream/2003/40649/1/Mao%20et%20al._ICHSF2021.pdf

“Separating the roles of speed, strain-rate and shock in interpreting dynamic Hardness”, Yu Mao, Blake Barnett, K. Sajun Prasad, Anupam Vivek and Glenn Daehn Conference Proceedings from 9th International Conference on High-Speed Forming, October 2021, (virtual). https://eldorado.tu-dortmund.de/bitstream/2003/40662/1/13_Mao%20et%20al.pdf

“Microstructure and Fracture Toughness of an Aluminum-Steel Impact Weld and Effect of Thermal Exposure”, N. Kohlhorst, A. Kapil, Z. Chen, A. Vivek, T. Lee, J-C Zhao and G. Daehn, *Met and Mat Trans A*, **52A**, 2795-2810 (2021). <https://doi.org/10.1007/s11661-021-06269-7>

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“Solid state welding of medium-entropy CrCoNi with heterogeneous, partially recrystallized microstructures”, C. E. Slone, B. Barnett, B. Gerogin, A. Vikek, E.P. Geroge and M. J. Mills, *Mat. Sci & Engr. A.*, **818** 14125 (2021). <https://doi.org/10.1016/j.msea.2021.141425>

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“Augmentation of Plasma-Based Impulse Generation with Rapid Chemical Reactions”, B. Thurston, Y. Mao, T. Lewis, A. Vivek and G. S. Daehn in: Daehn, G., Cao, J., Kinsey, B., Tekkaya, E., Vivek, A., Yoshida, Y. (eds) *Forming the Future*. The Minerals, Metals & Materials Series. Springer, (2021) https://doi.org/10.1007/978-3-030-75381-8_2

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2020

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Ph.D. ADVISEES

BLAKE BARNETT, PH.D., 2023

“Elementary Shock Analysis at the Upper Impact Velocity Limit and Associated Damage Mechanisms in Collision Welding”

Employer: Army Research Lab, Aberdeen, MD

BRIAN THURSTON, PH.D., 2023

“Advances in Two Agile Advanced Manufacturing Methods: Impact Welding and Metamorphic Manufacturing”

Employer: The Ohio State University, Post Doc

JIANXIONG LI, PH.D., 2022

“High Strength Impact Welding of Structural and Functional Materials: Process, Microstructure and Property”, Employer: Post-Doctoral Associate, Cornell University, Ithica, NY. (Co-advised with Boyd Pantan).

NOAH KOHLHORST, PH.D., 2021

“Microstructure and Property Evolution in Refractory Alloys and Weldments”.

Employer: Post-Doctoral Associate, The Ohio State University, Columbus, OH. (Co-advised with J-C Zhao). Employer: Ohio State University, post doc, P. M. Anderson, primary advisor

YU MAO, PH.D., 2021

“Systematic optimization of vaporizing foil actuator welding and dynamic science”.

Employer: Employer: Applied Impulse, Inc.

STANLEY BOVID, PH.D., 2021

“Aspects of vaporizing foil actuator welding for practical automotive applications”,

Employer: LSP Technologies, Dublin, OH.

ANGSHUMAN KAPIL, PH.D., 2020

“Aspects of vaporizing foil actuator welding for practical automotive applications”

Employer: Katholieke Universiteit te Leuven, Lueven, Belgium.

BRIAN UFFERMAN, PH.D., 2020

“Process Development of the Vaporizing Foil Actuator Technique”

Employer: Caterpillar, Peoria, IL.

BHUVI NIRHUDDO, PH.D., 2019

“Impact Welding and Shape Calibration of Nickel and Titanium Alloys”
Employer: ATI Metals, Natrona Heights, PA.

TAESEON LEE, PH.D., 2018

“Impact Welding: Fundamental Studies on Weld Interface Structure”
Employer: Assistant Professor, Incheon National University, Korea.

STEVEN R. HANSEN, PH.D., 2018

“Vaporizing Foil Actuator Process Parameters: Input Characteristics, Energy Deposition, and Pressure Output”
Employer: Lincoln Electric, Cleveland, OH

RYAN C. BRUNE, PH.D., 2016

“Effect of Geometric Parameters on Pressure Distributions of Impulse Manufacturing Technologies”
Employer: Center for Design and Manufacturing Excellence, The Ohio State University

BERT C. LIU, PH.D., 2016

“Joining of Dissimilar Metals by Vaporizing Foil Actuator Welding for Vehicle Weight Reduction”
Employer: Air Force Institute of Technology, Dayton, OH.

JASON R. JOHNSON, PH.D., 2013

“Developing the Axisymmetric Expanding Ring: A High Strain-Rate Materials Characterization Test”
Employer: Orchid Orthopedic Solutions, Holt, MI

HUIMIN WANG, PH.D., 2013

“Laser Impact Welding”, Employer: The Ohio State University,
Employer: Associate Professor, University of Science and Technology, Beijing.

ANUPAM VIVEK, PH.D. 2012

“Rapid Vaporization of Thin Metallic Conductors for Impulse Metalworking”
Employer: The Ohio State University

DR. YUAN ZHANG PH.D., 2010

“Investigation of magnetic pulse welding on lap joint of similar and dissimilar materials”
Employer: Intel

KINGA UNOCIC (CO-ADVISED WITH M.J. MILLS) PH.D., 2008

“Structure-composition-property relationships in 5xxx series aluminum alloys”

Employer: Oak Ridge National Laboratory

MALA SETH, PH.D., 2006

“High velocity formability and factors affecting it”

JIANHUI SHANG PH.D., 2006

“Electromagnetically assisted sheet metal stamping”

Employer: EWI

PEIHUI ZHANG, PH.D. 2003

“Joining enabled by high velocity deformation”

Employer: ABAQUS

MARK J. CARROLL, (CO-ADVISED WITH M.J. MILLS), PH.D., 2001

“Improvements to the strength and corrosion resistance of Al-Mg-Mn Alloys of near-AA5083 Chemistry”

Employer: Federal Mogul, Plymouth, MI

GUANGBIN JIANG, PH.D., 2000

Consolidation of Metal Matrix Composites under Cyclic Pressure”

Employer: Intel

KARIM ELFISHAWY, PH.D.1998

“Analytical and numerical modeling of the mechanical behavior of metal matrix composites”

Employers: Delphi / BondDesk Group

VINCENT VOHNOUT, PH.D., 1998

“A hybrid quasi-static / dynamic process for forming large sheet metal parts from aluminum alloys”

Employer: Navajo Institute of Technology

CHING-YAO HUANG, PH.D.1996

“Applications of Pressure Cycling on Metal Matrix Composite Processing”

Employer: Shu Zen College of Medicine and Management

V. S. BALANETHIRAM, PH.D,1996

“Hyperplasticity: enhanced formability of sheet metals at high velocity”

Employer: Trellborg Vibracoustic

YU-HSIAN HSIAO, PH.D., 1994

“Factors affecting creep damage accumulation and mechanical properties of 316 stainless steel weldments”

LIANG XU, PH.D, 1994

“The deformation and fracture of co-continuous alumina-aluminum composites under monotonic and cyclic loading”

Employer: Stanley Electric

HONGYAN ZHANG, PH.D., 1993

“Numerical and Analytical Predictions of Thermomechanical Behavior of Metal Matrix Composites”

Employer: Professor, University of Toledo

YONG-CHING CHEN, PH.D., 1991

“Elevated Temperature Deformation and Superplasticity of Metal Matrix Composites”.

Employer: Cummins Engine

M.S. ADVISEES

BISWANATH PAIRA, M.S. 2023

“Effect of impact welding on the joining of dissimilar metals”, co-advised with Boyd Panton

TROY LEWIS, M.S. 2022

“Process Development and Capabilities of Chemically Augmented Laser Impact Welding”
Employer: Det Norske Veritas group (DNV), Columbus, OH.

JACKSON PECK, M.S. 2018

“Design Factors in Laser Driven Impact Welding”
Employer: CGI Federal, Washington, DC

ALEX KOENIG, M.S. 2018

“Process Selection for Manufacturing of a Light and Simple Automobile”
Employer: Path Robotics, Columbus, Ohio

BETH A. YOAK, M.S. 2014 (CO-ADVISED WITH TONY LUSCHER)

“Rapid Nailing Method for Joining Dissimilar Materials”
Employer: Timken Steel

ILYA GOTLIB, M.S., 2014 (CO- ADVISED WITH TONY LUSCHER)

“An Analysis of High-Speed Impact Nailing for Lightweight Automotive Structures”
Employer: Lego Corp.

SHWETA GUPTA, M. S., 2013 (CO-ADVISED WITH TONY LUSCHER)

“Determination of Constitutive Equations by Instrumented Ring Expansion”
Employer: General Electric

DAVID BACKUS, M.S., 2013 (CO-ADVISED WITH TONY LUSCHER)

Employer: Bosch Corp.

NOLAN WINDHOLTZ, M.S., 2012

“Plane-strain formability of sheet metal at high velocity”
Employer: Black Diamond Equipment Co.

MATTHEW HANSEN, M.S. 2012 (MAE, CO-ADVISOR WITH TONY LUSCHER)

"Optimization of conformal joints in axial tension"

Employer: Whirlpool Corp.

STEVE WOODWARD, M.S. 2011

“Springback calibration of sheet metal components using impulse forming methods”

Employer: Google

BRAD KABERT, M.S. 2011

“High strain rate consolidation and forming of Armstrong and HDH titanium powder and sheet material”

Employer: General Motors

SHEKHAR SRINIVASAN, M.S. 2010

“A simulation perspective on dimensional control and formability in impact forming”

Employer: Feedback Consulting, Mumbai

SCOTT GOLOWIN, M.S. 2008

“Path actuators for magnetic pulse assisted forming and punch-less shearing”

Employer: AK Steel

KRISTIN BANIK (BLANDFORD), M.S. 2008

“Factors effecting electromagnetic flat sheet forming using the uniform pressure coil”

Employer: Navair/Navy

JON EVARTS, M.S. 2008

“Advanced processing techniques for co-continuous ceramic composites”

Employer: Puget Sound Naval Shipyard

EDUARDO DEL RIO PEREZ, M.S. 2007

“Co-continuous composites for high temperature applications”

Employer: Tosoh

JAMES M. NASH, M.S., 2004

“An orientation study of $\text{Al}_2\text{O}_3/\text{Al}$ co-continuous ceramic composites”

ANTHONY TURNER, M.S. 2002

“Spot impact welding of aluminum sheet”

Employer: U.S. Army

ASHISH KAPOOR, M.S. 2001

“Electromagnetic forming of aluminum-computational simulation, shrink flanging and dimensional reproducibility issues”

Employer: GE Power and Water

SUBHRANGSHU DATTA, M.S. 2000

“Electromagnetic forming and flanging of aluminum 6061 tubes”

Employer: Smith and Nephew

HEMANT PANSHIKAR, M.S. 2000

“Computer modeling of electromagnetic forming and impact welding”

Employer: Altair

YUEHONG FU, M. S. 2000

“The Effect of Pressure Cycling on Density and Particle Distributions in Metal Matrix Composites”

Employer: Lam Research

SRIDHARAN SRIVATSAN, M.S.1997

“Torsion creep of tungsten reinforced copper composites under thermal cycling conditions”

PRAMOD AGARWAL, MS. 1997

“Processing of co-continuous ceramic composite materials: precursor material selection and composite cleaning”

Employer: Oracle

MAHADEVAN PADMANABHAN, M.S.1997

“Wrinkling and Springback in electromagnetic sheet metal forming and electromagnetic ring compression”

GREGG FENTON, M.S. 1996

“Development of numerical tools to model plasticity in aluminum due to electromagnetic forces”, Employer: Applied Research Associates

MICHAEL FULLER, M.S. 1995

“The effects of precursor porosity and chemistry on the formation and strength of co-continuous ceramic composite materials”

Employer: Morton Thiokol

MARINA ALTENOVA, M.S. 1995

“The Improved Ductility of Aluminum and Copper Rings (Tubes) by Electromagnetic Forming Technique”

MICHAEL C. BRESLIN, M.S. 1994 (CO-ADVISED WITH H. L. FRASER)

“Transformation kinetics of $\text{Al}_2\text{O}_3/\text{Al}$ Co- continuous ceramic/metal composite materials (C^4) produced by a displacement reaction between liquid Al and fused SiO_2 ”

Employer: Protective Materials Group

KAVITHA HEBBAR, M.S.1994

“Isothermal and non-isothermal deformation behavior of aluminum- based metal matrix composites”

COURSES DEVELOPED and Taught

Developed MSE 794: Materials Science for High School Educators

Developed: Engineering 198a “Engineering, Manufacturing and the Creation of Wealth”

Developed: MSE 605: Quantitative Introduction to Materials Science and Engineering

MSE 581.02: Materials Science Lab II (Junior Level)

MSE 765: Mechanical Behavior of Materials

MSE 863: Time Dependent Deformation of Solids

MSE 561 Mechanical Behavior of Materials

MSE 2010: Introduction to Materials Science and Engineering