Junkun Ma, Ph.D.

Professor
Department of Engineering Technology
Sam Houston State University
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EDUCATION

Ph.D., Engineering Science/Applied Mechanics (Joint Doctoral Program) ***2004***

Dept. of Mechanical Engineering — San Diego State University
Dept. of Mechanical & Aerospace Engineering — University of California, San Diego
Dissertation: Synthesis of Dense TiC-Ti Based Cermets via Self Propagating High-Temperature Synthesis and Quasi-Isostatic Pressing

MS, Mechanical Engineering ***1999***

Dept. of Mechanical Engineering — N. China Electric Power University
Thesis: Safety and Durability Evaluation of High-Pressure Vessels Containing Non-Through Defects

B.S., Applied Engineering Mechanics ***1996***

Dept. of Applied Engineering Mechanics — Tsinghua University
Thesis: Distribution of Elastic-Plastic Field on Circular Rings Containing a Rounded Tip V-Notch under Incline Compressive Load

PROFESSIONAL EXPERIENCE

Professor *08/2020 ~ Current*
Associate Professor *08/2016 ~ 07/2020*
Dept. of Engineering Tech., Sam Houston State Univ.

Teaching:

ETME 3378: Applied Fluid Mechanics – fluid mechanics applied to hydraulic/pneumatic sys.
ETEC 3375: Statics – engineering mechanics for static systems
ETEC 3367: Engineering Materials Technology – properties and applications of materials
ETEC 4369: Manufacturing Process – industrial manufacturing processes and equipment
ETEC 4369: Building Systems – Heating, Ventilation, and Air Conditioning
ETDD 1361: Engineering Graphics – fundamental engineering graphics and drafting
ETDD 3310: Product Design and Development – complete processes of product design
ETDD 3379: Industrial Systems Drafting – industrial pipe system design and drafting
ETDD 4339: Computer-Aided Drafting Production – CAD design and prototyping methods
ETDD 4369: Design and Prototyping – 3D design and prototyping using various equipment
ETDD 4380: Material Hand & Plant Layout – facilities planning and material handling
ETDD 4388: 3D Parametric Design – 3D parametric modeling and analysis

Research:

- Mechanical system design, prototyping, integration, and test
- Simulation and modeling based on Finite Element Analysis (FEA) method
- Manufacturing processes and integration of manufacturing systems
- Alternative energy and its integration into LEED-certified construction
- Engineering and engineering technology education

Service:

- Developed the BS in Mechanical Engineering Technology (MET) degree program, including authorizing the proposal submitted to the Texas Higher Education Coordinating Board (THECB), course and curriculum development, and recruitment of new faculty members
- Developed teaching and research labs such as the Applied Fluid Mechanics lab, CNC lab, HVAC lab, and Fast Prototyping Lab (3D printing & laser processing)
- Served as coordinator for the ABET accreditation application of the BS in Construction Management program, including preparation of readiness review report, self-study report, course materials, course and curriculum development, and other materials
- Served as coordinator for the SACS assessment for the BS in Construction Management, Design Engineering Technology, Engineering Technology, and Electronics and Computer Engineering Technology, including authorizing and reviewing assessment documents
- Developed relationships with other educational institutions and local industries to establish the industrial advisory board for the MET program
- Serve in various department, college, and university level committees such as department search committee, college award committee, university research council, etc.

Associate Professor of Engineering Technology

Dept. of Computer Sci. & Industrial Tech., Southeastern Louisiana Univ. 08/2013 ~ 07/2016

Teaching:

ET205: Mathematical Methods for Engineers – Post-calculus engineering mathematics
ET241: Introduction to Engineering Materials – Fundamentals of engineering materials
ET271: Engineering Statics – Forces, equilibrium, moments, and work of rigid bodies
ET361: Solar Thermal Systems – Solar thermal systems and their applications
ET381: Strength of Materials – Mechanics and strength of engineering materials
ET385: Mechanical Design – Design of mechanical components and mechanisms
ET433: Wind Turbines – Technologies, applications, and economics of wind turbines
ET480: Advanced Strength of Materials – Finite Element Method stress/strain analysis
ET493/494: Senior Design I/II– Capstone design projects
ISAT770: Graduate Thesis – Investigation of a significant interdisciplinary topic

Research:

- Simulation and modeling based on Computational Fluid Mechanics (CFD) method
- Development of a sustainability center in which various alternative energy systems are

integrated for undergraduate research and education purposes

Service:

- Lead the efforts to apply for and successfully obtained ABET accreditation for the Engineering Technology program for six years
- Served as the undergraduate coordinator for the Engineering Technology program
- Served as faculty senator on behalf of the department in the university faculty senate
- Served the university facility planning committee and experiential learning council
- Served other duties such as judge for future city and science fair competitions

Assistant Professor of Engineering/Industrial Technology

Dept. of Computer Sci. & Industrial Tech., Southeastern Louisiana Univ. 08/2007 ~ 07/2013

Teaching:

IT209/309: Special Topics – Organized class or individual instruction
IT264: Industrial Fluid Power – Theory and practice of hydraulic and pneumatic systems
IT322: Material Science and Metallurgy – Study of major industrial materials
IT406: Facility Planning – Principles, methods, and techniques for facility planning
ET205; ET241; ET271; ET361; ET381; ET385; ET433; ET480; ET493/494; ISAT770
ET465: Industrial Simulation & Modeling – Simulation of manufacturing process
ISAT592: Scientific Visualization – Computer visualization of scientific data

Research:

- Computational Solid/Fluid Mechanics based on Finite Element Method (FEM)
- Development of functional gradient multi-layered composite materials for thermal management of microelectronics
- Modeling and simulation of sintering of particulate materials

Service:

- Lead the effort to create and build curricula and course materials for the Engineering Technology program
- Served as the curriculum chair for the Engineering Technology program to create and get University Curriculum Committee to approve 60 new courses
- Served as the undergraduate coordinator for the Engineering Technology program
- Serving other duties such as judge for future city and science fair competitions

Visiting Assistant Professor

Division of Math and Natural Science, Penn State Univ., Altoona 05/2005 ~07/2007

- Taught calculus-based General Physics and algebra-based Technical Physics
- Research focusing on single-mode microwave powder metal processing and sintering
- Supervised undergraduate students on research projects

Postdoctoral Fellow

Powder Technology Laboratory, San Diego State University 11/2004 ~ 05/2005

- Taught Finite Element Method
- Research focusing on microwave heating and sintering of powder materials

- Supervised undergraduate and graduate students

Co-Op Internship
RAS Computer Analysis Lab, Sun Microsystems Inc. San Diego, CA *06/2003 ~ 11/2004*
- Development of functional gradient composite material for thermal management of high-power micro-electronics
- Research focusing on electro-deposition of copper

Graduate Research Assistant
San Diego State University/ University of California, San Diego *09/1999 ~ 11/2004*
- Research focusing on the development of cermets composite using combined self-propagating high-temperature synthesis and quasi-isostatic pressing method
- Teaching assistant of Finite Element Method, Scientific Visualization, and Strength of Materials

Mechanical Engineer
DeShiChuang Corp. Beijing, China *06/1996 ~ 07/1999*
- Mechanical design using Computer-Aided Design (CAD) software
- Software development for application such as telephone banking
- Business development such as preparing a project bid package

PROFESSIONAL CERTIFICATIONS

- FANUC Certified Industrial Robot HandlingTool Operation and Programming
- FANUC Certified Industrial Robot iRVision-2D Operation and Programming
- FANUC Certified Online CNC Turning Center
- FANUC Certified Online CNC Machining Center
- SIEMENS LEAP Certification Level 1 – Milling
- SIEMENS LEAP Certification Level 1 – Turning
- ABET Institute for the Development of Excellence in Assessment Leadership (IDEAL) Scholar

PUBLICATIONS

Journal papers

- E. Fairbanks, J. Turner, **J. Ma**, C. Yu. Development of Novel Finger-Trigger Interface for Trigger Pull Measurement, *Journal of Forensic Sciences*, 65.6, 1954-1960, (2020).
- **J. Ma** and M. Suh. Design and Development of a Laboratory-Scale Dual Axis Solar Tracking System, *International Journal of Engineering Research and Innovation*, Vol. 12 (1), 40-48, (2020).
- **J. Ma**, K. Coogler, & M. Suh. Inquiry-based learning: Development of an introductory manufacturing processes course based on a mobile inverted pendulum robot, *International*

Journal of Mechanical Engineering Education, 0306419019844257, (2019).

- M. Suh, Y. Zhang, Y. Ahn, **J. Ma**, and A.R. Pearce. The Impact of LEED-Energy Star Certified Office Buildings on the Market Values of Neighboring Areas in New York City, *Journal of Construction Engineering and Project Management*, 9(2), 25-51, (2019).
- C. Cui, **J. Ma**, & B. Liu, Optimized composites with the largest material usage efficiency. *International Journal of Solids and Structures*, 161, 193-202 (2019).
- C. Koutsougeras, **J. Ma**, H. Luo. Study of a Vertical Axis Wind Turbine with Deflection Panels: COMSOL 2D Simulation of a Single Panel, *Journal of Advanced Research in Modeling and Simulation*, Vol. 1, Issue 1&2 -2018, Pg. No. 1-8. (2018).
- **J. Ma**, C. Koutsougeras, Effects of Design Parameters on the Fluid Flow and the Efficiency of Single Ended Evacuated Tubular Solar Thermal Collectors via FEM Modeling Experimentation, *Engineering Journal*, Vol. 19, No 5 (2015).
- **J. Ma**, EA Olevsky, Numerical Simulation of Densification and Deformation of Porous Bodies in a Granular Pressure-Transmitting Medium, Advances in Sintering Science Technology, *Ceramic Transactions*, Vol. 209, Pages 113-124 (2009).
- **J. Ma**, G.J. Weisel, B.L. Weiss, N.M. Miskovsky, D.T. Zimmerman, Systematic Study of Microwave Absorption, Heating, and Microstructure Evolution of Porous Copper Powder Metal Compacts, *J. of Applied Physics*, 101, 074906 (2007).
- EA Olevsky, **J. Ma**, and M.A. Meyers, Densification of Porous Bodies in a Granular Pressure-Transmitting Medium, *Acta. Materialia*, Vol. 55, Issue 4, Pages 1351-1366 Feb., (2007).
- **J. Ma**, EA Olevsky, and M.A. Meyers, Modeling of pressure transmission during post-reactive-sintering quasi-isostatic pressing, *Sintering 2003*, Eds. R.M. German, G.L. Messing, R.G. Cornwall, 6 p. (2003).
- H. Shi, **J. Ma**, X. Qing, Distribution of Elastic-Plastic Field on Circular Rings Containing a Rounded Tip V-Notch under Incline Compressive Load, *Chinese Journal of Applied Mechanics*, Page 13, No2, (1999).

Conference proceedings / presentations

- **J. Ma**, and I. Basith, Integration of an Industrial Robot with a CNC machining Center, *ASEE 127th Annual Conference and Exposition*, Montreal, QC, Canada, June 21-24, (2020)
- Basith, **J. Ma**, F. Yildiz, Certification and Training for Automation and Mechatronics, *ASEE 127th Annual Conference and Exposition*, Montreal, QC, Canada, June 21-24, (2020)
- **J. Ma**, and K. Coogler, Learning-by-doing: Development of Project-Based Manufacturing Courses, *ASEE 126th Annual Conference & Exposition*, Tampa, FL, June 16-19, (2019).
- I. Basith, and **J. Ma**, Integrating a FANUC robot with an EMCO machining center, *11th International Conference on Engineering and Computer Education*, Guimarães, Portugal, September 8-11, (2019).
- **J. Ma**, Project-Based Manufacturing Courses, *Congreso Internacional De Ingenierias II*,

San Jose, Costa Rica, September 19, (2019). (Keynote Speaker – Oral Presentation)

- **J. Ma**, Drag Force on a Vertical Axis Wind Turbine with Airfoil Pitch Control, *COMSOL Annual Conference 2019*, Boston, MA, October 2-4, (2019).
- I. Basith, & **J. Ma**, Use of FANUC robots in Manufacturing Curriculum, *International Mechatronics Conference and Exhibition*, Stillwater, OK, Oct. 23-25, (2019). (Abstract)
- M. Suh, S. K. Sands, K. Kim, Y. Ahn, **J. Ma**, and E. Karan, Cyber Security Awareness in Construction-Related Courses at Higher Education Institutions, *Proceeding of Sustainable Building and Environment 2019*, Seoul, South Korea, December 12-13, (2019).
- **J. Ma** and M. Suh, Evaporative Cooling in Solar Absorption Chiller, *COMSOL Conference 2018 Boston*, Boston, MA, October 3-5, (2018).
- **J. Ma**, Further Development of Capstone Design Project Courses based on a Case Study, *ASEE's 124th Annual Conference & Exposition*, Columbus, OH, June, (2017)
- **J. Ma**, C. Koutsougeras, H. Luo, Efficiency of a Vertical Axis Wind Turbine (VAWT) with Airfoil Pitch Control, *International COMSOL 2016 Conference*, Boston, MA, October, (2016)
- **J. Ma**, C. Koutsougeras, Evaluation of Design Efficiency via COMSOL Simulations, *2014 EPSCoR Industry-Academia Workshop on Advanced Materials and Manufacturing*, New Orleans, November (2014)
- **J. Ma**, *Microwave and Spark Plasma Sintering(SPS): recent experimental development, modeling and simulation using COMSOL Multiphysics*, *Pole University Leonard De Vinci International Week*, Paris, France. March, (2013)
- **J. Ma**, A. Parker, K. Kuang, *Thermal Properties of Copper Tungsten with Copper Via Composite*, *International COMSOL 2011 Conference*, Boston, MA, October, (2011).
- **J. Ma**, X. Wei, *Efficiency of Evacuated Tubular Solar Thermal Collector*, *International COMSOL 2011 Conference*, Boston, MA, October, (2011)
- K. Kuang, D. Zhu, **J. Ma,** Development of Super Copper Tungsten, *IMAPS ATW on R.F./Microwave Packaging*, San Diego, CA, September, (2009).
- **J. Ma**, X. Wei, Numerical Study of the Performance of a Super CuW / BeO Package, *IMAPS ATW on R.F./Microwave Packaging*, San Diego, CA, September, (2009).
- D. Zimmerman, J. Diehl, E. Johnson, K. Martin**, J. Ma**, Systematic Study of Microwave Absorption, Heating, and Microstructure Evolution of Porous Copper Powder Metal Compacts, *APS Spring 2008 Conference*, New Orleans, March, (2008).
- K. Martin, J. Cardellino, E. Johnson D. Zimmerman, **J. Ma**, Percolation Studies of Metal-insulator Composites at Microwave Frequencies*, APS Spring 2008 Conference*, New Orleans, LA March, 2008
- **J. Ma**, C.T. Smith, G.J. Weisel, B.L. Weiss, N.M. Miskovsky, D.T. Zimmerman, Single

Mode Microwave Heating of Copper Powder Metal Compacts, *International COMSOL 2006 Conference*, Boston, Oct. (2006).

- **J. Ma**, EA Olevsky, and M.A. Meyers, Synthesis of dense TiC-Ti based cermets via self-propagating high temperature synthesis and quasi-isostatic pressing, *Proceeding 36th International SAMPE Technical Conference* (2004).
- X. Wang, **J. Ma**, A. Maximenko, E.A. Olevsky, M. B. Stern, and B. M. Guenin, Preliminary study on synthesis of composites by electrophoretic deposition and microwave sintering, *Proceeding Annual IMAPS Conference*, Long Beach, CA (2004).
- **J. Ma**, E. Olevsky, and M. Meyers, Modeling of Densification of Cermet Composites*, 16th Annual CSU Student Research Competition*, Long Beach, CA, May, (2002).

GRANTS

External

- **J. Ma** (PI), F. Yildiz (Co-PI), R. Pecen (Co-PI), T. Pannkun (Co-PI), A. Smith-Herron (Co-PI), *Development of a Handheld infrared Thermography-Minirhizotron Device for Nondestructive Rapid Detection of Cyst Nematodes*, Plant Protection Act FY2021 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$139,000** (2020) (**funded**)
- R. Balaraman (PI), **J. Ma** (Co-PI), B. Brooks (Co-PI), P. Ramsay (Co-PI), J. Cook (Co-PI), W. Godwin (Co-PI), K. Skillern (Co-PI), *To support for STEAM Education for School Students in Walker, County*, Texas, Powell Foundation, **$50,000** (2020) (**funded**)
- A. Morgan-Olvera (PI), **J. Ma** (Co-PI), *Soil Nematode Extension and Use of New Infrared Technology in TX*, Crop Protection and Pest Management, US Department of Agriculture, **$199,824**, (2020) (pending)
- M. Choudhary (PI), **J. Ma** (Co-PI), S. Nair (Co-PI), H. Cho (Co-PI), R. Balaraman (Co-PI), *Technology-Oriented Team-based Experiential Learning: Interdisciplinary Approach in Agricultural Research and Extension Experiences for Undergraduates*, Agriculture and Food Research Initiative, US Department of Agriculture, (2020) (pending)
- **J. Ma** (PI), A. Smith-Herron (Co-PI), F. Yildiz (Co-PI), S. Scherer (Co-PI), Developing a pathway leading careers in the advanced manufacturing industry in Texas, NSF INCLUDES, (2020) (denied)
- **J. Ma** (PI), L. Lester (Co-PI), A. Smith-Herron (Co-PI), D. Hoffpauir (Co-PI), Q. Liu (Co-PI), *Development of a Field Deployable Autonomous System for Rapid Detection of an invasive pest*, Plant Protection Act FY2021 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$199,197** (2020) (denied)
- F. Yildiz (PI), R. Pecen (Co-PI), A. Smith-Herron (Co-PI), U. Dakeev (Co-PI), **J. Ma** (Co-PI), *Design and Development of Automated Invasive Pest Survey and Sorting Devices for Field Deployment*, Plant Protection Act FY2021(Annual) Implementation

Plan for Section 7721, US Department of Agriculture, **$158,691**, (2020) (denied)

- **J. Ma** (PI), F. Yildiz (Co-PI), R. Pecen (Co-PI), A. Smith-Herron (Co-PI), *Development of a Handheld infrared Thermography-Minirhizotron Device for Nondestructive Rapid Detection of Cyst Nematodes*, Plant Protection Act FY2020 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$131,834** (2019) (**funded**)
- F. Yildiz (PI), R. Pecen (Co-PI), **J. Ma** (Co-PI), A. Smith-Herron (Co-PI), *Design and Development of Automated Insect/Pest Control and Sorting Devices for Field Deployment*, Plant Protection Act FY2020 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$146,814** (2019) (**funded**)
- **J. Ma** (PI), A. Smith-Herron (Co-PI), F. Yildiz (Co-PI), R. Scherer (Co-PI), *NSF INCLUDES Planning Grant: Developing a Pathway Leading Careers in the Advanced Manufacturing Industry in Texas*, Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES), **$98,659** (2019) (denied)
- **J. Ma** (PI), L. Lester (Co-PI), Q. Liu(Co-PI), *Development of an Autonomous Mobile Robotic System for Rapid Detection and Control of Ambrosia Beetles*, Plant Protection Act FY2020 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$194,706.24** (2019) (denied)
- I. Basith (PI), F. Yildiz (Co-PI), **J. Ma (Co-PI)**, *Building Animated Learning Objects for High Consequence Pests Using Adobe EDGE Technology*, Plant Protection Act FY2020 (Annual) Implementation Plan for Section 7721, US Department of Agriculture, **$121,307** (2019) (denied)
- **J. Ma (PI)**, M. Safa (Co-PI), P. Zelbst (Co-PI), *Development of a Wetland Restoration Platform*, Environmental Projects, Entergy Services LLC, $77,061 (2019) (denied)
- R. Pecen (PI)**,** F. Yildiz (Co-PI), K. Coogler (Co-PI), M. Safa (Co-PI), **J. Ma (Co-PI)**, *Design, Construction, and Implementation of Zero-Emission PV Charging Stations for City of Huntsville*, Entergy Services, LLC, $165,014, (2019) (denied)
- M. Holt (PI), B. Loft (Co-PI), J. Allen (Co-PI), B. Glisson (Co-PI), **J. Ma (Co-PI)**, *SHSU STEM Works*, NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM), $997,235 (2019) denied
- M. Safa (PI), P. Zelbst (Co-PI), C. Yu (Co-PI), R. Pecen (Co-PI), J. Bytheway (Co-PI), **J. Ma** (Co-PI), W. Glisson (Co-PI), J. Contreras (Co-PI), A. Smith-Heron, *MRI: Acquisition of State-of-the-art "Focus S 70" and "Forensic ScanArm" for Advanced Non-Contact 3D Scanning Research and Education at Sam Houston State University*, NSF Major Research Instrumentation Program, **$172,119** (2019) denied
- **J. Ma** (PI), M. Suh (Co-PI), *Study of the Effectiveness of an Entrepreneurship-Based Internship Program*, Cooperative & Experiential Education Division (CEED), American Society for Engineering Education (ASEE), **$7,999** (2018) denied

- **J. Ma (PI)**, M. Saadeh (Co-PI), L. Ho-hoon (Co-PI), *Development of an Engineering Design, Analysis, and Prototyping Laboratory*, Louisiana Board of Regents ($53,500) and Southeastern Louisiana University ($17,000). Total **$70,500** (2015) (**funded**)
- V. Sebastian (PI), **J. Ma (Co-PI)**, *Tapping into a Well of Potential,* American Association of Drilling Engineers. **$25,000** (2014) (**funded**)
- M. Saadeh (PI), **J. Ma (Co-PI)**, *Automated Rod Singulation Station*, Louisiana Board of Regents ($11,850) and Laitram LLC. ($9,736). Total **$21,586** (2014) (**funded)**
- **J. Ma (PI)**, *Microwave and Spark Plasma Sintering (SPS): recent experimental development, modeling and simulation using COMSOL Multiphysics,* International Week, Pole University France. **$3,000** (2013) (**funded**)

Internal

- A. Bane (Student), **J. Ma** (Faculty), *Design and Development of a Delta Robot for Material Handling in an Automated Manufacturing Line*, Summer 2020 Faculty and Student Team (FAST) Awards, Enhancing Undergraduate Research Experiences & Creative Activities (EURECA), **$6,000** (2019) (denied)
- **J. Ma (PI)**, R. Scherer, *Redesign an Engineering Graphics Course to Incorporate SolidWorks CSWA/CSWP Professional Certifications*, Teaching Innovation Grants (TIGs), Professional and Academic Center for Excellence (PACE), **$7,000** (2019) (denied)
- **J. Ma (PI)**, *Design and Development of Project-Based Instructional Materials for ETEC3375 Statics*, SHSU STEM Center: Scholarship of Teaching and Learning, **$2,000** (2019) (**funded**)
- **J. Ma (PI)**, I. Basith (Co-PI), *Integrating a Fanuc Industrial Robot with an Emco Machining Center*, Office of Research & Sponsored Program (ORSP): Pilot Study Program,**$10,376** (2018) (**funded**)
- D. Fritsche (Student), B. Lowry (Student), **J. Ma** (Faculty), *Development of a Robotic Platform for Wetland Studies*, Summer 2019 Faculty And Student Team (FAST) Awards, Enhancing Undergraduate Research Experiences & Creative Activities (EURECA), **$8,000** (2018) (**funded**)
- J. Ma (PI), K. Coogler (Co-PI), *Development of a Project-Based Machining Technology Course*, Professional and Academic Center for Excellence (PACE), **$7,000** (2018) denied
- H. Martinez (Student), **J. Ma** (Faculty), *Experimental Study of Vertical Axis Wind Turbine (VAWT) with Pitch and Camber Controls*, Summer 2018 Faculty And Student Team (FAST) Awards, Enhancing Undergraduate Research Experiences & Creative Activities (EURECA), **$6,000** (2017) (**funded**)
- **J. Ma (PI)**, K. Coogler (Co-PI), Development of a Project-based Introductory Manufacturing Process Course, Professional and Academic Center for Excellence, Sam

Houston State University, **$7,000** (2017) (**funded**)

- **J. Ma (PI)**, Modeling a VAWT with Pitch and Camber Controls, Faculty Research Grant (FRG), Office of Research and Sponsored Program (ORSP), **$6,000** (2016) (**funded**)
- **J. Ma (PI)**, *Expanding Computational Power of the COMSOL Software Package by Acquiring Computational Fluid Dynamics (CFD) Module,* Office of Technology, Southeastern Louisiana University. **$4,495** (2013) (**funded**)
- **J. Ma (PI)**, *Acquisition of the SolidWorks 3D CAD Software,* Center for Faculty Excellence of Southeastern Louisiana University. **$1,000** (2012) (**funded**)
- **J. Ma (PI)**, *Biomass based experimental Bio-Ethanol production plant,* Office of Technology of Southeastern Louisiana University. **$5,000** (2011) (**funded**)
- **J. Ma (PI)**, *Evaluation of the Performance of a Vacuumed Tube Solar Water Heater*, Office of Technology of Southeastern Louisiana University. $**4,730** (2010) (**funded**)
- N. Huy, D. Joshua, D. Aaron, R. Thomas, C. Bradley, **J. Ma (Faculty Advisor)**, *Solar Water Heating System Analog-to-Digital Signal Converter,* STAR Program of the College of Science and Technology, Southeastern Louisiana University. **$1,497.94** (2009) (**funded**)
- P. Derek, F. Jameson, **J. Ma (Faculty Advisor)**, *Mini Baja Car Project,* STAR Program of the College of Science and Technology, Southeastern Louisiana University. **$2,145** (2009) (**funded**)
- **J. Ma (PI)**, *Numerical Computing and Graphics Power for the Engineering Technology Bachelors' Degree Program*, Office of Technology of Southeastern Louisiana University. $**15,348** (2008) (**funded**)
- **J. Ma (PI)**, *Design and Fabrication of Miniature Lightweight Bridge*, Office of Technology of Southeastern Louisiana University. $**4,989** (2008) (**funded**)

SERVICES

- NSF Reviewer 2020 & 2021; NSF Reviewer Panelist 2021
- Reviewer: Journal of Aerospace Engineering, Journal of Engineering Technology, Journal of Mechanical Engineering Education, American Society for Engineering Education
- University Patent Review Committee & University Faculty Research Council
- ABET Accreditation Coordinator & SACS Assessment Coordinator
- Development of New Degree Proposal, Curriculum, and Courses
- Judge for Science & Engineering Fair of Houston (SEFH) & Future City Competition, Houston

PROFESSIONAL AFFILIATIONS

- American Society for Engineering Education (ASEE)
- The American Society of Mechanical Engineers (ASME)