One Washington Square, San Jose, CA 95192
Phone: 408-924-3222 ~ Email: david.yan@sjsu.edu

Deakin University, Australia
University of Ontario Institute of Technology, Canada (visiting PhD student)
Thesis: Machinability and Material Behaviour during Cutting of Titanium-5Al-5Mo-5V-3Cr-0.5Fe

Auckland University of Technology, New Zealand
Thesis: Study of Shoulder Flow Zone Forming Mechanism in Thick Section Friction Stir Welding of 6061 Aluminum Alloy Using Scroll Shoulder Tool

Auckland University of Technology, New Zealand

National Science Foundation

San Jose State University
San Jose State University
ersity of Wisconsin-Green Bay
University of Wisconsin-Green Bay
in University

Engineering Research Institute, Auckland University of Technology (AUT), New Zealand

Designed, developed and optimized FSW tooling and processing parameters in AUT laboratory, and provided project management and consulting services in New Zealand manufacturing industry.

Reduced the overall fabrication cost by 25% for ship building company and its contractor (Donovan Group NZ Ltd) through the implementation of FSW systems to join aluminum plates for forming the cabin wall and front deck of the naval patrol ship.

Designed and optimized holding/clamping systems to butt/lap joint thick aluminum and copper structures.

Buckley Systems Limited, Auckland, New Zealand

Designed and fabricated non-tilted FSW tools to join thick aluminum plates for making vacuum chambers used in semi-conductor ion implant systems.

Reduced the overall fabrication cost by 30% by designing and implementing FSW systems to upgrade the existing machining and fabrication processes.

Designed, evaluated and optimized FSW processing parameters to achieve defect-free weld structure in thick aluminum sections (1.5 inches), and developed holding/clamping systems for FSW of aluminum vacuum chamber components.

(part-time)

Engineering Research Institute, Auckland University of Technology, New Zealand

Researched advanced materials processing technologies including FSW of metals and light metals, sheet-metal forming and aluminum casting and extrusion process.

Designed and developed FSW tools and processing parameters to butt join dissimilar thin aluminum, steel and copper plates.

Conducted materials testing and metallurgical analyses including mechanical properties testing and optical & electron microscopes characterization.

Developed mechanical engineering technology curriculums between Spring 2015 (full-time appointment) and Summer 2015 (50% appointment), then taught twenty-one credit courses from Fall 2015 (full-time 3-year appointment) to Spring 2017.

Courses taught including

- Chemistry for Engineers (lecture and lab)
- Engineering Materials (lecture and lab)
- Mechanical Design
- Mechatronics (lecture and lab)
- Fluid Mechanics

Graduate advisor responsible for advising graduate work in the areas of sustainable manufacturing and environmentally conscious manufacturing.

Department of Engineering and Physics, Abilene Christian University, TX, US

Taught Engineering and Physics I & II and participated in B.S. of Mechanical Engineering program curriculum development and ABET accreditation preparation.

Department of Automotive, Mechanical and Manufacturing Engineering, University of Ontario Institute of Technology, Canada

Performed teaching duties for undergraduate courses including

- Advanced Solid Mechanics and Stress Analysis
- Dynamics
- Manufacturing and Production Processes
- Solid Mechanics

Department of Mechanical and Manufacturing Engineering, Auckland University of Technology, New Zealand

Conducted classroom tutorial and laboratory preparation for upper year undergraduate courses including

- Engineering Materials
- Advanced Manufacturing Technology
- Advanced Engineering Mathematics
- Dynamic Systems and Controls

San José State University (SJSU)

San José State University

San José State University (SJSU)

Symposium Co-Organizer, Friction Stir Welding and Processing X Symposium, sponsored by The Minerals, Metals & Materials Society (TMS) held during the TMS 2019-148th Annual Meeting & Exhibition, March 10-14, 2019 in San Antonio, TX.

Symposium Co-Organizer, Friction Stir Welding and Processing IX Symposium, sponsored by The Minerals, Metals & Materials Society (TMS) held during the TMS 2017-146th Annual Meeting & Exhibition, February 26-March 2, 2017, San Diego, CA.

Active Member, the Additive Manufacturing Bridge Committee, TMS.

1. Obi, S., , D. P., & Ostovari, P., “Industrial Technology Programs at SJSU: Silicon Valley Perspectives and Implications for ATMAE”, The Proceeding of 2018 Annual Conference of the Association of Technology, Management, and Applied Engineering (ATMAE), November 7-9, 2018, Kansas City, Missouri, pp. 120-121.
2. , D., Wang, X. and Littlefair, G., "Flow Features in Shoulder Zone during Scroll Tool Friction Stir Welding Thick 6061 Aluminum Plates". Y. Hovanski et al. (eds.), Friction Stir Welding and Processing IX. The Minerals, Metals & Materials Series, pp. 137-143, the TMS 2017, DOI 10.1007/978-3-319-52383-5_15.
3. Xie, B., Kumar, M., , D. and Jin. X., "Material Behavior in Micro Milling of Zirconium based Bulk Metallic Glass". Supplemental Proceedings. The Minerals, Metals & Materials Series, pp. 363-373, the TMS 2017, DOI 10.1007/978-3-319-51493-2_34.
4. Liu, X., Liu, Y., , D., Han, Q. and Wang, X., "Aluminum Alloys with Tailored TiB2 Particles for Composite Applications". A.P. Ratvik (ed.), Light Metals 2017. The Minerals, Metals & Materials Series, pp. 181-186, the TMS 2017, DOI 10.1007/978-3-319-51541-0_25.
5. , D. P., Hilditch, T., Kishawy, H. A. and Littlefair, G., "Shear Displacement and Actual Strain during Chip Segmentation when Cutting Aerospace Alloy Ti-5553". S. J. Ikhmayies et al. (ed.), Characterization of Minerals, Metals, and Materials 2016. the TMS (The Minerals, Metals & Materials Society) 2016-145th Annual Meeting & Exhibition, February 14–18, 2016, Nashville, TN, pp. 753-760.
6. , D. P., Littlefair, G., Pasang, T. and Kishawy, H. A., "An Investigation of Actual Strain during Chip Formation when Cutting Ti–5Al–5Mo–5V–3Cr–0.5Fe". The 1st International Conference on Virtual Machining Process Technology (CIRP sponsored conference), 28th May-1st June, 2012, Montreal, Canada, pp. 1-8.
7. David , Guy Littlefair and Tim Pasang, "Deformation Induced Phase Transformation during Machining of Ti-5Al-5Mo-5V-3Cr– -

Oral Presentations:

1. Chang, H., Silberman, J. and D. P., “Investigation to Micro Friction Stir Spot Welding Al and Cu Sheets to Foils for Automotive Lithium-ion Battery Cells Assembly”, in the Advanced Microelectronic Packaging, Emerging Interconnection Technology and Pb-free Solder Symposium held during the Minerals, Metals & Materials Society (TMS) 2020-149th Annual Meeting & Exhibition, February 23-27, 2020, San Diego, CA, accepted in August 2019.
2. Silberman, J., Chang, H. and , D. P., “Effect of Tool Speeds on Joint Characteristics in Friction Stir Spot Joining Zr-based BMG to Al Alloy”, in the Bulk Metallic Glasses XVII Symposium held during the Minerals, Metals & Materials Society (TMS) 2020-149th Annual Meeting & Exhibition, February 23-27, 2020, San Diego, CA, accepted in August 2019.
3. , D., Wang, X. and Littlefair, G., "Flow Features in Shoulder Zone during Scroll Tool Friction Stir Welding Thick 6061 Aluminum Plates", Friction Stir Welding and Processing IX Symposia- Lightweight Applications, sponsored by the TMS (The Minerals, Metals & Materials Society) held during the TMS 2017-146th Annual Meeting & Exhibition, February 26-March 2, 2017, San Diego, CA.
4. , D. P., Hilditch, T., Kishawy, H. A. and Littlefair, G., “On Quantifying the Strain Rate during Chip Formation when Machining Aerospace Alloy Ti-5553”, The 14th CIRP Conference on Modeling of Machining Operations (CIRP CMMO 2013), June 13-14, 2013, Torino, Italy.
5. , D. P., Littlefair, G., Pasang, T. and Kishawy, H. A., "An Investigation of Actual Strain during Chip Formation when Cutting Ti–5Al–5Mo–5V–3Cr–0.5Fe". The 1st International Conference on Virtual Machining Process Technology (CIRP sponsored conference), May 28 -June 1, 2012, Montreal, Canada.
6. David , Guy Littlefair and Tim Pasang, "Deformation Induced Phase Transformation during Machining of Ti-5Al-5Mo-5V-3Cr–0.5Fe". Deformation, Damage, and Fracture of Light Metals and Alloys Symposium-Session III, sponsored by the TMS (The Minerals, Metals & Materials Society) held during the TMS 2011-140th Annual Meeting & Exhibition, February 27-March 3, 2011, San Diego, CA.
7. David P. , Guy Littlefair and Zhan W. Chen, “Material Flow Forming the Shoulder Flow Zone Using Scroll Shoulder Tool during Friction Stir Welding of Thick Section Aluminum alloys”. Global Innovations in Manufacturing of Aerospace Materials: The 11th MPMD Global Innovations Symposium: Innovations in Primary and Secondary Forming-Aluminum, Magnesium, and Titanium Aluminides / Innovations in Machining and Joining, sponsored by the TMS (The Minerals, Metals & Materials Society) held during TMS 2010-139th Annual Meeting & Exhibition, February 14-18, 2010, Seattle, WA.
8. David P. , Zhan W. Chen and Guy Littlefair, “Correlation between Shoulder Flow Zone Quality and Material Flow Quantity during Friction Stir Welding of Thick Aluminum Section Using Scroll Shoulder Tool”. Materials Processing and Manufacturing Division-Welding Symposium, sponsored by the TMS (The Minerals, Metals & Materials Society) held during TMS 2010-139th Annual Meeting & Exhibition, February 14-18, 2010, Seattle, WA.

Poster Presentations:

1. , D. P., “On Quantifying Amorphous to Crystalline Phase Transition during Micro Milling Zr-based Bulk Metallic Glasses”. Bulk Metallic Glasses XV Symposium-Poster

11. David , (PI), (Fall 2017), Faculty Diversity Development Research, Curricular and Creative Activities Award of $5000 from the Office of Diversity, Equity & Inclusion, SJSU, submitted but not awarded.
12. David (Co-PI), (Fall 2016), One Time University Funds of $64,309 for Automation Laboratory Setup from the College of Science and Technology, University of Wisconsin-Green Bay, awarded.
13. David (PI), (Fall 2016), Grants in Aid of Research of $900 to co-organize and present a paper on the Friction Stir Welding and Processing IX Symposium of the TMS 2017, University of Wisconsin-Green Bay, awarded.
14. David (PI), (Fall 2016), Student Success/Retention One-Time Funds for Engineering Workshop of $35,700 from the University of Wisconsin-Green Bay, submitted but not awarded.

Independent Merit Reviewer, The Shota Rustaveli National Science Foundation of Georgia, Georgia, since 2019

Independent Merit Reviewer, Fiscal Year 2018-19 and 2019-20, the Department of Energy's Small Business Innovation Research (SBIR) Phase II Release 2 Proposals

Independent Merit Reviewer, Fiscal Year 2018-19 and 2019-20, the Department of Energy's Technology Commercialization Fund Proposals

ASME, Journal of Manufacturing Science and Engineering since 2016

Inderscience, International Journal of Manufacturing Research since 2016

Member of the Epsilon Pi Tau (EPT) International Honor Society for Technology, since 2018

Member of the TMS (The Minerals, Metals & Materials Society) since 2014