

Technical Program

Tuesday, September 23rd, 2025

Purdue Memorial Union North Ballroom

8:45 AM	Welcome to ICSP 15 and Purdue! Dave Bahr (ICSP15 Chairman)	
9:00 AM	Honoring Professor Kirk Jack Champaigne	
9:15 AM	Plenary Lecture From Shot Peening of Historical Pompeii Walls to the Redesign of Roman War Machines: A Reverse Engineering Approach Mario Guagliano	
Stewart Hall		
10:00 AM	STEW 214	
	Coffee Break	
	STEW 202	STEW 206
	Industrial Applications 1 (Chaired by: Beach)	Surface Engineering 1 (Chaired by: Balan)
10:45 AM	Shot Peening of Highly Loaded Compression Springs D. Breuer	Effect of Shot Hardness on Peening Intensity K. Balan
11:05 AM	Fatigue Life Improvement and Residual Stress Retention of Laser Peened AM IN718 and Single Crystal Nickel CMSX-4® Superalloys After Corrosion and Thermal Exposure J. Fuhr, L. Hackel, K. Davami, M. Munther, N. Morar	Application of Burnishing Process Expected to Frictional Heat to Non-Oriented Electromagnetic Steel Sheet Y. Kobayashi, M. Okada, T. Kubo
11:25 AM	New Electronic Peening Intensity Sensor – Machine Integration for Industry 4.0 S. Forgues, B. Labelle, R. Ben Moussa	Enhancing Shot Peening and Blasting Processes With High-Density Ceramic Beads D. Bouttes, M. Arnold
11:45 AM	Integration of E-Strip® Technology as a Method of Process Control in Robotic Peening W. Beach, S. Glaizier, C. Sickler, K. Beach, S. Forgues	Roughness Parameters for the Evaluation of Blasted or Shot Peened Surfaces S. Stöckel, S. Gröger

12:15pm	PMU South Ballroom	
	Lunch	
Stewart Hall		
	STEW 202	STEW 206
	Industrial Applications 2 (Chaired by: Whalen)	Surface Engineering 2 (Chaired by: Watanabe)
1:25 PM	Methodologies and Applications of the Shot Peen Process to Hole, Slot, or Other Obstructed Geometry <i>J. Hoffman, J. Whalen, W. Green</i>	Portable Inspection Technology for Shot Peening as Preventive Maintenance at Steel Bridges <i>Y. Watanabe, M. Handa, R. Watanabe, K. Hattori, M. Yamawaki</i>
1:45 PM	The Use of a Dynamic Imaging System to Characterize Particle Size and Shape for Shot Peening Media <i>M. Spink, T. Canty, L. Feltner, P. Mort</i>	Microstructural Changes and Residual Stress Generation on the Periodically Patterned Surface Texture Fabricated by Angled Fine Particle Peening <i>Y. Kameyama, H. Sato, R. Shimpo</i>
2:05 PM	Advancing Shot Peening Quality Control With the Shotmeter: A Modern Approach to Intensity Measurement <i>D. Lessard, J. Henri, J. Robert, D. Georgaris</i>	Evaluating the Effectiveness of Localized Masking to Prevent Changes in Residual Stress When Shot Peening <i>J. Harrison, J. Pineault, S. Carlson</i>
2:25 PM	Evaluation of Peening Intensity With Nozzle-Mounted Sensor During Processing <i>A. Matsui, Y. Kobayashi</i>	Comparison of Anti-Fouling Performance of Textured Glass Surface Fabricated by Ductile-Mode Peening and Precision Grinding <i>H. Tagaya, Y. Kameyama, S. Kodama, H. Sato, K. Shinagawa, A. Sekiguchi, S. Hirai, H. Ohmori</i>

Technical Program

Wednesday, September 24th, 2025

Stewart Hall

	STEW 202	STEW 206
	Residual Stress (Chaired by: Schmidt)	Laser & Alternative Peening 1 (Chaired by: Sanders)
8:30 AM	Origin and Interpretation of PSI-Splitting / Out-of-Plane Shear Stress When Using Diffraction Technique <i>M. Belassel, J. Pineault, M. Brauss</i>	Cavitation Abrasive Surface Finishing and Peening (CASF) for Cleaning, Smoothing and Fatigue Treatment of Additive Manufactured Components <i>D. Sanders</i>
8:50 AM	Residual Stress Relaxation of SMAT-Treated Inconel 718 After Different Thermal Treatments <i>A. Garambois, P. Kanouté, L. Toulabi, D. Retraint</i>	Effects of Laser Peening on Fatigue Properties of Welded Aluminum Thin Plates <i>K. Masaki, Y. Sano, Y. Mizuta, S. Tamaki</i>
9:10 AM	Dynamic Flowsheet Modeling of Shot Peening Processes <i>P. Mort, L. Feltner</i>	Expansion of Laser Peening Application With a High-Power Microchip Laser on a Robotic Arm <i>Y. Sano, Y. Mizuta, S. Tamaki, T. Hosokai, T. Kato, Y. Sakino, V. Schneidau, S. Holz, J. Behler</i>
9:30 AM	Enhancing the Fatigue Strength of AM Materials via Mechanical Surface Treatment <i>J. Schubnell, J. Radners, F. Keil, S. Fliegner</i>	Creating Heterogeneous Surface Gradient Structure via Ultrasonic Shot Peening <i>E. Oranli, A. Astaraee, M. Novelli, T. Grosdidier, M. Guagliano, S. Bagherifard</i>
10:00 AM	STEW 214	
	Coffee Break	

Stewart Hall		
	STEW 202	STEW 206
	Shot Peening of Additive Materials ¹ (Chaired by: Sealy)	Laser & Alternative Peening 2 (Chaired by: Ferdon)
10:30 AM	The Effect of Fatigue Strength on Shot Peened and Barrel Finished SUS316L Additive Manufactured Products <i>H. Nishijima, T. Tsuji, Y. Kobayashi, K. Masaki</i>	Effect of Shot and Laser Peening on the Very High Cycle Fatigue Strength of Additive Manufactured Maraging Steel <i>K. Takahashi, Y. Kita, G. Nakamura, Y. Furuya</i>
10:50 AM	Modulating Microstructure, Surface Properties and Fatigue Properties of Additively Manufactured AlSi10Mg Alloy Through Peening Surface Post-Treatments <i>E. Oranli, A. Amiri, A. Astaraee, M. Bandini, S. Bagherifard, M. Guagliano</i>	Process Design for Laser Peen Forming of Complex Shape: From Analytical Solution to Peening Pattern <i>J. Jiang, Y. Hu</i>
11:10 AM	Hybrid Additive Manufacturing of Polylactic Acid by Fused Filament Fabrication and Shot Peening <i>E. Parial, M. Sealy</i>	Effect of Fine Particle Peening Induced Material Transfer on the Initial Deposition Behavior of Nickel Electroplating on Aluminum Substrate <i>K. Iijima, Y. Kameyama, H. Sato, S. Kodama</i>
11:45 AM	PMU South Ballroom	
	Lunch (Speaker: AAM—Cory Padfield)	

Technical Program

Thursday, September 25th, 2025

Stewart Hall

	STEW 202	STEW 206
	Fatigue 1 (Chaired by: Brown/Padfield)	Industrial Applications 3 (Chaired by: Breuer)
8:30 AM	Numerical Assessment of Shot Peening Contribution to the Fatigue Strength of Gear Tooth Root <i>G. Cortabitarte, X. Telleria, I. Llavoria, I. Ulacia, M. Larrañaga, J. Esnaola</i>	Overcoming the Challenges of Robotic Shot Peening With Adaptive Automation <i>D. Lim</i>
8:50 AM	The Impact of Surface Finish Treatments on the Fatigue Strength of Shot Peened Al Alloys <i>M. Bandini, V. Fontanari, C. Menapace, M. Benedetti</i>	Effects of Spring Shape, Residual Stress and Hardness by Stress Relieving Heat Treatment of Cold-Formed Springs <i>J. Shin, G. Hwang, T. Sohn</i>
9:10 AM	Investigations on the Fatigue Strength of Threads Produced by Different Fabrication Techniques <i>J. Hoffmeister, P. du Maire, A. Öchsner</i>	Adaptation of Shot Peen Parameters for Gear Geometry <i>D. Breuer, B. Matlock</i>
9:30 AM	Reduced Order Approach for Peening Stress Field Variability <i>L. Feltner, P. Mort</i>	Dry Laser Peening: A New Laser Peening Technique Without Both Coating and Water Using Femtosecond Laser-Driven Shock Wave <i>T. Sano</i>
10:00 AM	STEW 214	
	Coffee Break	
	STEW 202	STEW 206
	Fatigue 2 (Chaired by: Johnson)	Shot Peening of Additive Materials 2 (Chaired by: Adams)
10:45 AM	Influence on Shot Peening and Blast Polishing for Rotating Bending Fatigue Strength of Vacuum Carburized Steel With Circumferential Notch <i>T. Tsuji, Y. Kobayashi, K. Masaki</i>	Improvement of the Fatigue Behaviour of Additive Manufactured Scalmalloy by Using Surface Improvement Processes <i>F. Bobby, I. Heras, A. Perrián, J. Sogorb, J. de los Santos, A. Muñoz</i>
11:05 AM	Effect of Hardness and Residual Stress on Rolling Contact Fatigue Life of Ductile Iron <i>J. Narasimhan, F. Sadeghi</i>	Comparison of Peening Effect Between Additive Manufactured and Drawing Titanium Alloy <i>H. Soyama</i>
11:25 AM	Enhancing High Cycle Fatigue Performance of Electron Beam Melted Ti6Al4V: A Study on Shot Peening and Hot Isostatic Pressing <i>R. Mamidala, N. Mojib</i>	Mitigation of Hydrogen Embrittlement in Inconel 718 Produced by LPBF Using Shot Peening <i>C. Bianchetti, D. Tade, M. Brochu</i>

Stewart Hall		
11:45 AM	STEW 202	
	Optical Profilometry for Measurement of Residual Stress Variability L. Feltner, P. Mort	
12:00 PM	PMU South Ballroom	
	Lunch	
Stewart Hall		
	STEW 202	STEW 206
	Industrial Applications 4 (Chaired by: Mort)	Innovative Shot Peened Steel Dynamics (Chaired by: Bahr)
1:10 PM	From Strain to Stress: Stress Map Testing of Almen Strips <i>D. Stumpf, R. Varma, P. Mort</i>	Peening Coverage Effects on Surface Integrity of Additive Manufactured 316SS <i>S. Chandramouli, M.P. Sealy, M.S. Titus</i>
1:30 PM	Structure-Processing-Mechanical Property Measurements Using High-Throughput Nanoindentation <i>E. Hintsala, K. Schmalbach, J. Johnson, S. Bhowmick, D. Stauffer</i>	Anisotropic Residual Stress Measurements in Additively Manufactured 316 Stainless Steel Parts <i>R. Varma, P. Mort</i>
1:50 PM	Investigation of Topography Changes of Blasted Surfaces: An Experimental Perspective Using Fiducial Markers <i>S. Stöckel, S. Gröger</i>	Hydrogen Embrittlement in Shot-Peened Steel <i>J.-H. Tien, D.R. Johnson, D.F. Bahr</i>
2:10 PM	Improvement of Lithium-Metal Electrode All-Solid-State Batteries Performance by Shot Peening and Magnetron Sputtering <i>A. Okumura</i>	Novel 3D Optical Metrology for Shot Peen Coverage <i>E. Novak</i>
2:30 PM	STEW 214	
	Coffee Break	
3:15 PM	STEW 202	
	ISCSP Meeting	