

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

Industrial Applications 1
(Chaired by: Beach)

STEW 206

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>R. Sheehan, 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. Toulbi, 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. Flieger</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 AISi10Mg 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 D. Stumpf, R. Varma, P. Mort	Peening Coverage Effects on Surface Integrity of Additive Manufactured 316SS S. Chandramouli, M.P. Sealy, M.S. Titus
1:30 PM	Structure-Processing-Mechanical Property Measurements Using High-Throughput Nanoindentation E. Hintsala, K. Schmalbach, J. Johnson, S. Bhowmick, D. Stauffer	Anisotropic Residual Stress Measurements in Additively Manufactured 316 Stainless Steel Parts R. Varma, P. Mort
1:50 PM	Investigation of Topography Changes of Blasted Surfaces: An Experimental Perspective Using Fiducial Markers S. Stöckel, S. Gröger	Hydrogen Embrittlement in Shot-Peened Steel J.-H. Tien, D.R. Johnson, D.F. Bahr
2:10 PM	Improvement of Lithium-Metal Electrode All-Solid-State Batteries Performance by Shot Peening and Magnetron Sputtering A. Okumura	Novel 3D Optical Metrology for Shot Peen Coverage E. Novak
2:30 PM	STEW 214	
	Coffee Break	
3:15 PM	STEW 202	
	ISCSP Meeting	