

## 2024 Manufacturing PA Innovation Program Awards

Applicant	University	Project Title	Funding Amount	Manufacturer	Location
Abu-Ayyad, Ma'moun	Pennsylvania State University, Harrisburg	PID Controller Embedded in Industrial Programmable Logic Controller (PLC) to Control the Motion of Needleless Assembly Machine	\$ 67,203	Sartorius North America Inc.	New Oxford, PA
Chang, Wesley	Drexel University	Multiscale characterization and metrology to support process development of Arkema binders for high energy density SiOx electrodes	\$ 70,000	Arkema	King of Prussia, PA
Chen, Kevin	University of Pittsburgh	Adaptive Ultraviolet Laser Optics Fabrication of Shark-Fin Coating for Aerospace Applications	\$ 70,000	R&D Coatings, LLC Michael Dvorchak Enterprises, LLC Covestro LLC	R&D Coatings - McKees Rocks, PA Michael Dvorchak Enterprises, LLC - Monroeville, PA Covestro - Pittsburgh, PA
Chmielus, Markus	University of Pittsburgh	Development of Industry-Relevant Test Equipment for Magnetic Shape-Memory Alloy Actuators	\$ 70,000	Aerotech Inc.	Pittsburgh, PA
Dahi Taleghani, Arash	Pennsylvania State University	Polymer Seals to Withstand Chemicals at High Temperatures	\$ 70,000	Polymics, Ltd.	State College, PA
Erdem, Ergin	Robert Morris University	Hydraulic Tank Design Improvement using CFD and Rotomolding Process Simulation Analysis	\$ 59,345	Schroeder Industries	Leetsdale, PA
Eslami, Babak	Widener University	Experimental Investigation of Optimizing 3D Printing of Polyether-ether-ketone (PEEK)	\$ 64,350	American Additive Manufacturing	Horsham, PA
Farnam, Yaghoob	Drexel University	Manufacturing lightweight aggregate from synergistic integration of significant Pennsylvania solid waste streams including coal combustion ash, fiberglass-polymer composite, and soda-lime glass	\$ 70,000	SusMaX Inc	Philadelphia, PA
Foy, Gregory	York College of Pennsylvania	Development of a Deployable Kiosk for Laboratory Sample Handling within the Manufacturing Environment	\$ 69,850	MRG Laboratories Airline Hydraulics	MRG Labs - York, PA Airline Hydraulics Corporation - York, PA
Fu, Zhezhen	Pennsylvania State University, Harrisburg and University of Pittsburgh (sub-award)	Cobalt-free high-entropy alloys as the binder materials in cemented carbides	\$ 70,000	Kennametal Inc.	Latrobe, PA
Garcia, C. Isaac	University of Pittsburgh	Cost Effective Alumina Forming in Cast Stainless Steels Alloys for High Temperature Applications	\$ 70,000	Duraloy Technologies Inc Cleveland Cliffs	Scottsdale, PA Coatesville, PA

Grainger, Brandon	University of Pittsburgh	Power Electronics Based Measurement System for Characterizing Magnetic Components	\$ 69,999	CorePower Magnetics	Pittsburgh, PA
Harris, Zachary	University of Pittsburgh	Creating a Pennsylvania-Centered Supply Chain for Additive Manufacturing of Cu-Ni Components	\$ 70,000	Metal Powder Works ExOne	Metal Powder Works - Clinton, PA ExOne - North Huntingdon, PA
Ji, Xiaoxu	Gannon University	A Novel 3D Printing Composite Material for Vibration Elimination in Aerospace	\$ 69,328	Parker Lord	Erie, PA
Kander, Ronald	Thomas Jefferson University	Contained and Continuous Water Retting of Hemp Fiber for Ecological & Economic Sustainability	\$ 69,909	Natural Textiles Solutions	Macungie, PA
Kitchens, Christopher	Villanova University	Production of Valuable Biochemicals from Brewery Spent Grain Byproduct by Hydrothermal Carbonization	\$ 59,048	SoMax BioEnergy Inc.	Spring City, PA
Kundu, Animesh	Lehigh University	Development of High Temperature Hybrid Thermal Energy Storage Utilizing Thermosyphons and Refractory Ceramics	\$ 69,995	HarbisonWalker International	Pittsburgh, PA
Kurtz, Steven	Drexel University	3D Printed PAEK Tibial Cones for Revision Knee Replacement	\$ 70,000	Maxx Orthopedics	Norristown, PA
Li, Bo	Villanova University	A New Method to Quantify Cut Resistance in High-performance Synthetic Webbing Slings	\$ 70,000	OTEX Specialty Narrow Fabrics®	Watsontown, PA
Lu, Fei	Drexel University	PA-EV-Plug: Promoting Adoption of Electric Vehicles through high-Power wireless user-friendly charging	\$ 70,000	InductEV Wireless Charging	King of Prussia, PA
Magenau, Andrew	Drexel University	Clean Hydrogen Production via a Flow-through Porous Polymeric Solid-Support with Photocatalytic One-dimensional TiO2-based Lepidocrocite Nanomaterials	\$ 70,000	FXI Inc.	Aston, PA
Ohodnicki, Paul	University of Pittsburgh	In-line laser-based advanced manufacturing of nanocrystalline alloys for electrification applications	\$ 70,000	CorePower Magnetics	Pittsburgh, PA
Osgood-Zimmerman, Logan	Bucknell University	Design of Traffic Cone Placement & Retrieval Mechanism	\$ 70,000	Royal Truck and Equipment	Shoemakersville, PA
Ozdoganlar, Burak	Carnegie Mellon University	Enhancing Steelmaking with Optimized Porous Ceramics	\$ 70,000	Vesuvius, Plc	Pittsburgh, PA
Palmer, Todd	Pennsylvania State University	Development of Novel Powder Metallurgy Processes for High Strength Steels	\$ 70,000	TAT Technologies, Inc. Embassy Powdered Metals, Inc.	TAT Technologies - St. Marys, PA Embassy Powdered Metals, Inc. - Emporium, PA
Panat, Rahul	Carnegie Mellon University	Scalable Manufacture of 3D Architected Li-ion Battery Electrodes via Aerosol Jet and Extrusion 3D Printing	\$ 69,000	Power 3D Inc.	Pittsburgh, PA
Pastore, Christopher	Thomas Jefferson University	Characterization of hemp-derived graphene	\$ 69,909	Laurel Materials, LLC	Mayfield, PA

Pistorius, P. Chris	Carnegie Mellon University	Hydrogen and microstructural effects on cold cracking of aluminum ingots	\$ 70,000	Arconic	New Kensington, PA
Shih, Wei-Heng	Drexel University	Biocompatible, nontoxic aqueous quantum dots for gene delivery	\$ 48,605	AQD Life Sciences, LLC	Philadelphia, PA
Siegler, Sorin	Drexel University	A Swelling copolymeric suture anchor	\$ 70,000	Pace Surgical Inc.	Malvern, PA
Speicher, Terry	Pennsylvania State University, Berks Campus	Digital Twin Implementation for CNC Machine Tool	\$ 28,049	Duryea Technologies	Reading, PA
Stumbris, Steven	Bucknell University	Design and Development of a New Hydraulic Holding Mechanism	\$ 70,000	York Precision Machining & Hydraulics	York, PA
Suarez, John	Widener University	Roadway-Surface Nonuniformity Detection for Automobiles	\$ 68,200	Dorman Products, Inc.	Colmar, PA
Tang, Pingbo	Carnegie Mellon University	Proactive Delay and Waste Control in Customized Building Manufacturing Systems	\$ 70,000	DMI Companies Module Design Inc.	DMI Companies - Charleroi, PA Module Design Inc. - Pittsburgh, PA
Tang, Xiaochao	Widener University	Repurposing Sewage Sludge Ash for Nonstructural Concrete Applications	\$ 69,438	Conewago Manufacturing, LLC Delaware County Regional Water Quality Control Authority (DELCORA)	Conewago Manufacturing - Hanover, PA DELCORA - Chester, PA
Tucker, Alexander	Children's Hospital of Philadelphia	A next-generation, painless wound dressing for acute wounds in children and those with delicate skin	\$ 70,000	Archimedic Inc.	West Chester, PA
Vander Wal, Randy	Pennsylvania State University	CleanGraphene: Physical Characterizations and Performance Evaluations	\$ 69,380	Laurel Materials, LLC	Mayfield, PA
Wang, Qian	Pennsylvania State University	Part-scale thermal control to improve build quality of additive manufactured parts	\$ 70,000	PanOptimization LLC	State College, PA
Webler, Bryan	Carnegie Mellon University	Water-atomized powders for powder-feed direct energy deposition	\$ 70,000	Ametek Specialty Metal Products	Eighty Four, PA
Whitefoot, Kate	Carnegie Mellon University	Digital Twins for Manufacturing Resiliency to Material Supply Disruptions	\$ 70,000	Westinghouse Panasonic	Westinghouse - Cranberry Township, PA Panasonic - Pittsburgh, PA
Wiezorek, Jorg	University of Pittsburgh	Spheroidal Ti-powder preparation by energy frugal up-converting of machining scrap secondary feedstock	\$ 68,750	6K Additive	Burgettstown , PA
Wu, Qianhong	Villanova University	A Wearable Technology to Enhance Conditioning and Recovery	\$ 69,999	Square Root Brands LLC	West Chester, PA

Yang, Shu	University of Pennsylvania	A next-generation, painless wound dressing for acute wounds in children and those with delicate skin	\$ 70,000	Archimedic Inc.	West Chester, PA
Zhang, Jessica	Carnegie Mellon University	Predicting Residual Deformation in LPBF with Neural Networks and Uncertainty Quantification	\$ 70,000	HexSpline3D LLC	Sewickley, PA
Zhao, Xiayun	University of Pittsburgh	Enhancing Binder Jetting based Ceramics Additive Manufacturing via In-situ Process Monitoring	\$ 70,000	Du-Co Ceramics Company	Saxonburg, PA
			\$ 3,050,357		