Pixelligent Technologies Receives $1.9 Million Grant from U.S. Department of Energy's Advanced Manufacturing Office

Program will support commercialization of PixClear® nanoparticles for next-generation lubricants for wind turbines, EVs, and other industrial applications
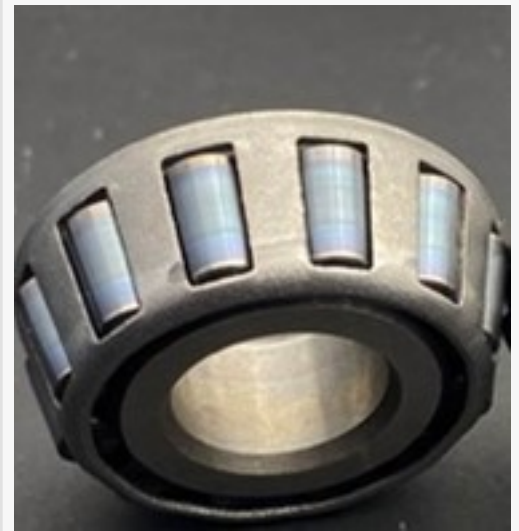
BALTIMORE, MARYLAND, UNITED STATES, September 8, 2022 /EINPresswire.com/ -- Pixelligent Technologies (Pixelligent) today announced a $1.9M grant from the U.S. Department of Energy's (DOE) Advanced Manufacturing Office (AMO) to fund a program titled "Rapid and Efficient Deposition of Metal Oxide Coatings for Bearings and Gears in Harsh Environments." The grant follows an earlier award of $1.5M in 2020.

Bearing with PixClear ZrO2 in-situ coating

The funds will help speed commercialization of Pixelligent's PixClear® nanoparticles for next-generation lubricants. Engineered uniquely to withstand intense operating conditions in harsh environments, the PixClear® solution aims to vastly improve performance and energy efficiency, while reducing wear and extending useful lifetime. Target applications include wind-turbine gear boxes, wheel bearings in electric vehicles (EVs), marine components, steel and aluminum rolling plants, space-related applications, and others.

"The grant exemplifies the steady advocacy of U.S. science-based companies by agencies like the DOE," said Pixelligent's CEO, Craig Bandes. "And now, that resolve to champion breakthrough U.S. technologies to strengthen the nation's innovation leadership is reinforced by the landmark CHIPS and Science Act and Inflation Reduction Act. The new legislative priorities and associated resources will unleash a trove of visionary ideas from U.S.-based tech pioneers like Pixelligent. It's an exciting time to be part of this ecosystem."

The U.S. Departments of Energy and Defense have provided nearly $6M of funded programs to date, said Pixelligent's CTO, Serpil Gonen Williams. "The resources have enabled us and our partners to develop breakthroughs in lubricant additives to substantially boost the performance and efficiency of diverse clean-energy applications. Once again, our partners on this grant are the Carpick Research Group at the University of Pennsylvania's School of Engineering and

Applied Science and Argonne National Labs. In addition, we are proud to name ExxonMobil, Infineum, and Winergy-Flender as commercial testing partners to help accelerate adoption of these lubricants," she said.

"This cross-disciplinary partnership between industry, university, and national laboratory researchers has led to a new discovery: that nanoparticles can rapidly form robust protective coatings on surfaces. This is a game-changer for applications where harsh operating conditions can otherwise lead to component failure. This project will allow us to advance this discovery toward commercial implementation. We're excited to see this benefit multiple applications including renewable energy applications," said Robert Carpick, a co-investigator on the proposal in Penn Engineering's Department of Mechanical Engineering and Applied Mechanics.

PixClear is trademarked by Pixelligent

About Pixelligent
Pixelligent has reinvented the way composite materials are made by synthetically replicating a broad set of metal oxide materials found in nature. Our PixClear®, PixJet™, and PixNIL™ materials deliver a combination of properties, operating efficiencies, and never-before-seen performance for Extended Reality devices driving the Metaverse, OLED/MicroLED displays, Optics, Sensors, Solid-state lighting, and Industrial applications. Our proprietary product development and fully scaled manufacturing platform, the PixClearProcess®, enables Pixelligent to engineer materials that seamlessly integrate into the most common manufacturing processes, including ink jet, nanoimprint, microimprint, spin coating, dispensing, slot-dye and photolithography. Our PixClearProcess® utilizes a fraction of the manufacturing footprint required by traditional chemical companies, and our efficiency-enhancing PixClear® materials deliver energy efficiencies across display, solid- state lighting and industrial applications. Please visit us at www.pixelligent.com and follow us on LinkedIn and Twitter @Pixelligent.

About The Carpick Research Group at the University of Pennsylvania
The Carpick Research Group is housed in the Department of Mechanical Engineering and Applied Mechanics in the School of Engineering and Applied Sciences at the University of Pennsylvania. The group works at the intersection of mechanics, materials, and physics to conduct research into nanotribology (the atomic-scale origins of friction, adhesion, lubrication, and wear), nanomechanics, nanostructured materials, and atomic force microscopy (AFM). Their primary focus is on using AFM and other surface science and material characterization techniques to probe the fundamental nature of materials in contact, and to apply the results to practical applications. You can read more about the group at: https://carpick.seas.upenn.edu/.

Jane Evans-Ryan
Pixelligent Technologies
+1 443-529-8310
marketing@pixelligent.com
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