Prince Mohammad Bin Fahd University Research Highlights for 2024

PMU gears up for impactful research in 2024, focusing on energy efficiency and medical diagnostics through supersonic ejectors and artificial intelligence.

Research Breakthroughs at PMU: Advancing Science and Innovation

AL-KHOBAR, EASTERN PROVINCE, SAUDI ARABIA, December 27, 2023 /EINPresswire.com/ -- With new academic semesters soon getting under way at universities worldwide, faculty are looking forward to bringing their unique expertise to campuses to benefit students and research activities alike. At Prince Mohammad Bin Fahd University (PMU), a prestigious institute of higher learning in Saudi Arabia, new faculty members and researchers are accordingly gearing up to make 2024 an impactful year, both scholastically and scientifically.

"We are extremely proud of the research environment at PMU that generates solutions to real-world problems through innovation that is recognized and valued through the awarding of patents," said Dr. Issa Al Ansari, President of PMU. "We look forward to the contributions that our researchers will make to our campus community and to the Kingdom of Saudi Arabia, and from there to the full community of nations worldwide, spreading positive change and prosperity through innovative scholarship."

“Support for research at PMU is an essential element of our institution’s identity and mission,” said Dr. Faisal Alanezi, the Vice President for Academic Affairs at PMU. “In 2024, we will continue to build on the tremendous progress we’ve seen to date by further maturing the innovative technologies and approaches our research community has created.”

We have interviewed two such faculty members at PMU with registered patents, Dr. Mouhammad El Hassan and Dr. Ghazanfar Latif. El Hassan an Associate Professor of Mechanical Engineering at the College of Engineering, while Dr. Latif is building on his work as a Research Coordinator at the Deanship of Research and Graduate Studies at PMU by further serving as the acting Director of the Center for Artificial Intelligence.

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Revolutionizing through Dramatic Energy Savings

A key area of research that Dr. El Hassan is focusing on supersonic ejectors. These mechanical devices combine fluid streams and offer wide, multifaceted potential in various applications. One particularly promising application is enhancing the performance of heat pumps, which are found ubiquitously in heating and cooling systems for buildings, vehicles, and industrial machines.

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> *Dr. Issa Al Ansari, President (PMU)*

The supersonic ejectors studied by Dr. El Hassan could revolutionize the energy sector, manufacturing, and transportation, thus helping to secure a sustainable future—that is, if the ejectors efficiency were increased and thus their energy consumption reduced. These advances are explored through advanced computational modeling and artificial intelligence methods.

"Recognizing the immense opportunities that PMU offers, I was drawn to its vibrant academic environment and the drive to make significant contributions to the global scientific community," said Dr. El Hassan. "I've been inspired by the PMU's vision and the commitment to excellence and I'm eager to push the boundaries of knowledge in the field of supersonic ejectors."

The goals of the supersonic ejector-based systems at PMU align with Saudi Vision 2030, the

strategic framework of economic and social transformation the Kingdom has established for opening up the nation to the world by diversifying the economy and enhancing health, education, infrastructure, tourism, and other public service sectors. The ejector project supports the Vision's objectives for the development of knowledge-based industries, the fostering partnerships between academia and industry, and a commitment to sustainability and environmental responsibility.

Realizing the Power and Promise of Artificial Intelligence

On another level, PMU is supporting Dr. Latif in pursuing innovative projects involving artificial intelligence, Arabic language technologies, and medical diagnostics. Specifically, the work involves the development of computer vision and machine learning technologies that analyze medical images to greatly enhance diagnoses, for instance via early detection of tumors as well as other relevant anomalies.

"PMU is known for its commitment to academic excellence and fostering a culture of research and innovation," said Dr. Latif.

In summary, Dr. Latif envisions a future at PMU where his and his colleagues' research activities spearhead advancements with far-reaching significance. Dr. Latif said: "My aim is to unravel complexities, drive innovation, and contribute to finding solutions to global challenges impacting the academic and industrial landscape."

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