Press Release

In a significant step toward sustainability and scientific advancement,

Abu Dhabi University Faculty Member Secures German Patent for Breakthrough Sustainable Packaging

Abu Dhabi, UAE, 20 June 2025: In a significant step toward sustainability and scientific innovation, Dr. Rahaf Ajaj, Chair of the Department of Environmental and Public Health at Abu Dhabi University's (ADU) College of Health Sciences, has been awarded a German utility model patent for her pioneering research into biodegradable polymeric films. This achievement underscores ADU's commitment to driving impactful research with real-world applications that benefit both the environment and student learning.

Granted by the German Patent and Trade Mark Office (DPMA), the utility model titled "Composition of polymer films based on pectin containing a boswellic acid derivative for improved functionality" represents a breakthrough in active packaging materials. Developed in collaboration with an international team of scientists, the innovation combines pectin, a natural plant-based polymer, with a specially synthesized compound derived from boswellic acid, resulting in enhanced antioxidant activity and improved water resistance.

The new biodegradable film holds significant potential across several sectors. In the food industry, it has the potential to extend product shelf life by protecting against spoilage, while in healthcare, it introduces safer and more efficient drug delivery systems with wider biomedical applications. Engineered with an optimized formulation, the film delivers the ideal balance of durability and flexibility, paving the way for large-scale industrial adoption.

Dr. Rahaf Ajaj, Chair of the Department of Environmental and Public Health at Abu Dhabi University, said: "This patent reflects years of applied research aimed at replacing harmful plastics with sustainable alternatives. With the support of Abu Dhabi University, I am proud to see our work recognized on an international stage. By synthesizing a novel bioactive compound and integrating it into pectin-based films, we've created a material that delivers both

environmental and functional value. This milestone reflects our mission to develop sustainable alternatives to traditional plastics and contribute to a circular economy. It also enhances opportunities for ADU students, who are involved in applied research that prepares them to be changemakers in environmental science, healthcare, and beyond."

This achievement reflects ADU's broader strategic vision to be a hub for global research collaboration and environmental innovation. By empowering faculty and students to co-create sustainable solutions, the university strengthens its contribution to the UAE's environmental goals and nurtures the next generation of scientific leaders.

For more information about Abu Dhabi University, please visit: https://www.adu.ac.ae/

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