Mom was right – leaving the refrigerator door open wastes energy. A lack of discipline at home may not cause energy bills to shoot sky high, but for grocery stores that have thousands of consumers constantly opening and closing doors in the frozen food section, the bottom line takes a hit.

Dr. Subrata Roy, UF mechanical and aerospace engineering associate professor and director of the Applied Physics Research Group, is working with four Ph.D. students on the project to enhance the technology, determine temperature changes and review the level of performance in power consumption for efficiency.

"Plasma jets have numerous consumer can reach in through layers of cold and warm air that act as an invisible door to grab an item.

Most grocery and convenience stores have freezers with pull doors that typically hold ice cream and frozen dinners, and open-case refrigerators that store meats and dairy products. Those types of displays are estimated to represent 35 percent and 55 percent of the total energy consumption of grocery stores and convenience stores, respectively.

To lessen this impact, Gainesville’s Cool Flow Dynamics is working to keep food cold without compromising accessibility. The company teamed up with the University of Florida through The Corridor’s Matching Grants Research Program for research on the use of its plasma synthetic jets in open-case refrigerators to restrict cold air loss. The jets blow cold air down and a separate wall of warm air acts like a curtain across the front of the case shielding the cold refrigerator air from escaping. With the technology, a
Roy is not only a university professor, but also co-founder and chief technology officer for Cool Flow Dynamics. CEO Kalu Watanabe specifically sought him out when starting the company after a meeting with an energy executive from Wal-Mart on a separate entrepreneurial venture. Watanabe realized the food and beverage industry had a great need to increase energy efficiency and has since worked to deliver a solution.

“For me, to be able to work with the university, work with these students and a team that has already been working together through The Corridor program – it’s unbelievable,” said Watanabe. “Having done it other ways in the past, this is a faster process to get a product or prototype or proof of concept to market. It’s a no brainer.”

Floridians are all too familiar with the humid, muggy days of summer. Whether going on a camping trip or spending the day at the beach, residents know to plan in advance for hot weather, a potential afternoon thunderstorm and, of course, mosquito bites.

For decades, the most common defenses against mosquito bites have been aerosol sprays or other products that contain DEET, the active ingredient found in most insect repellents. However, as one group of Corridor-based researchers discovered, these repellents offer only short-term protection and the long-term effects of such chemicals are not yet known. Even more importantly, they recognized a large market for their product idea—a sustained-release spatial repellent that doesn’t require the use of topical sprays or lotions.

Keeping Mosquitoes at Bay
Without Bug Spray

Florida is no stranger to mosquitoes. With warm weather and plenty of standing water, it’s no surprise that these pesky insects are a common sight in the state. However, there is a growing concern about their role in the spread of diseases such as dengue fever, Zika virus, and malaria. To combat this issue, researchers at The Corridor, a university-based incubator for start-ups, are developing a new type of mosquito repellent.

The Corridor-based researchers have come up with a innovative approach to mosquito control. Their product is a sustained-release spatial repellent that doesn’t require the use of topical sprays or lotions. This makes it a more convenient and effective option for protecting against mosquito bites.

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The researchers at The Corridor have been working on developing a new type of mosquito repellent that is more effective and convenient than traditional products. Their product is a sustained-release spatial repellent that doesn’t require the use of topical sprays or lotions. This makes it a more convenient and effective option for protecting against mosquito bites.

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