

Industry/University Center for Biosurfaces (IUCB)

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Superior Relief From Dry Eye and Dry Mouth Problems

Many people suffer from both “dry eye” and “dry mouth” problems. They experience a “gritty” sensation when blinking or when trying to swallow. Researchers at SUNY Buffalo’s Center for Biosurfaces have developed a new and improved tissue-on-tissue measurement technology that provides information that correlates better with what really goes on in the eye and in the mouth. The new methodology is leading to the development of products that result in user benefits more quickly than was possible with earlier techniques that used only synthetic materials. Using this new tissue-on-tissue testing protocol researchers demonstrated the superior reduction of “blinking” friction and swallowing difficulties associated with addition of novel solutions compared to saline-wetted tissue surfaces. Significant improvements in the lubricity of in-the-eye and in-the-mouth comfort formulations have been achieved by selecting the polymer products of nature rather than synthetics made in the laboratory. More importantly, the research has shown how to formulate these polymer products for safety and effectiveness in over-the-counter products. Previously available test methods did not reveal the clinically relevant superior lubricity for the natural polymer solutions.



This photo shows the simple placement of a drop of lubricating solution, after which significant and long-lasting comfort is obtained. This effect is demonstrated well in the unique tissue-on-tissue test developed at the Industry/University Center for Biosurfaces (IUCB), and is now being explored for in-the-mouth lubrication as well.

Economic Impact: Expensive doctor’s visits and costly time off work can now be more frequently avoided because of the availability of in-the-eye lubricants that allow more hours of comfort and function. Soon, it is expected that research will reveal the even more-needed solution to problems of “dry mouth” that plague our aging population and often render swallowing of needed medications difficult or impossible. Annual commercial sales of the SYSTANE artificial tears solutions now exceed \$200 million.

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Allergy Friendly Room Program

A new industrial partnership now combines a recently patented allergy-friendly room-treatment process, with a line of novel air purifiers capable of maintaining high air quality for long periods. A new Corporation, PURE-HealthWay Global of Pulaski, NY is marketing the new process and equipment worldwide. The company provides pre-packaged allergy friendly rooms to the hospitality market.

The process substantially reduces particles, bacteria, mold spores, and fungi in indoor environments. An added benefit is energy savings of 25% or more through the cleaning and sanitization of heating and cooling coils in an air-handling unit. An intrinsic part of this breakthrough technology is a special line of HeathWay air purifiers that can maintain the room environment at fewer than 600,000 respirable particles, regardless of how dirty the outside air really is. Within the past year, IUCB has tested an expanded line of HeathWay filters and ascertained that they are able to remove 99.99% of all respirable particulate matter, even when deliberately introduced.



The new PURE HealthWay Global process keeps hospitality rooms, as shown above, clean and crisp and tolerable for allergy-prone guests. The process of cleaning and maintaining the air quality is so good that the PURE process has now been adopted for health clubs and related facilities worldwide.

Economic Impact: Ongoing research with PUE HealthWay partners is resulting in substantial new business opportunities across the nation and around the world. The new PURE HealthWay International Division has developed a worldwide licensing program. It has partnered with firms in Canada, Dutch Caribbean, Barbados, United Arab Emirates, Singapore, Scandinavia, Malaysia, and China. The Hyatt national hotel chain agreed to convert 2,800 rooms over the next year. The contract, valued at over \$10.0 million U.S is generating substantial royalty fees for the company.

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