

Refrigerated Medicine Storage

Optimized for security and temperature monitoring

Secure, refrigerated storage and monitoring of medicine removal presents a significantly greater challenge compared to non-refrigerated storage. This is caused by the need to ensure proper air circulation, temperature monitoring, and electronic component robustness. Among the limited options for secure refrigerated storage, one of the most popular options is a locked refrigerator that is connected to a secure electronic system that controls access to the entire refrigerator. However, once the refrigerator is unlocked the entire refrigerator and all contents are accessible, which can allow for the unauthorized access of medicine. VCU researchers have developed a novel method for refrigerated medicine storage that provides optimized security and temperature monitoring.

The technology

The refrigerated storage system has been designed to optimize airflow, allow for consistent cooling of contents, and ensure return to temperature when contents are exposed to open conditions. The method of cooling is also designed to meet or exceed NIH/CDC/FDA standards that require medicines & vaccines to be kept within 1.5 degrees Celsius of a target temperature. This allows medicines to maintain their shelf life and reduces the need to reset their expiry dates, a practice which can cause a wastage value of up to \$70,000 per line item. As a result, this storage system has the potential to help hospitals save millions of dollars in medicine storage. The device comes further equipped with control systems which allow the temperature to be monitored at all times.

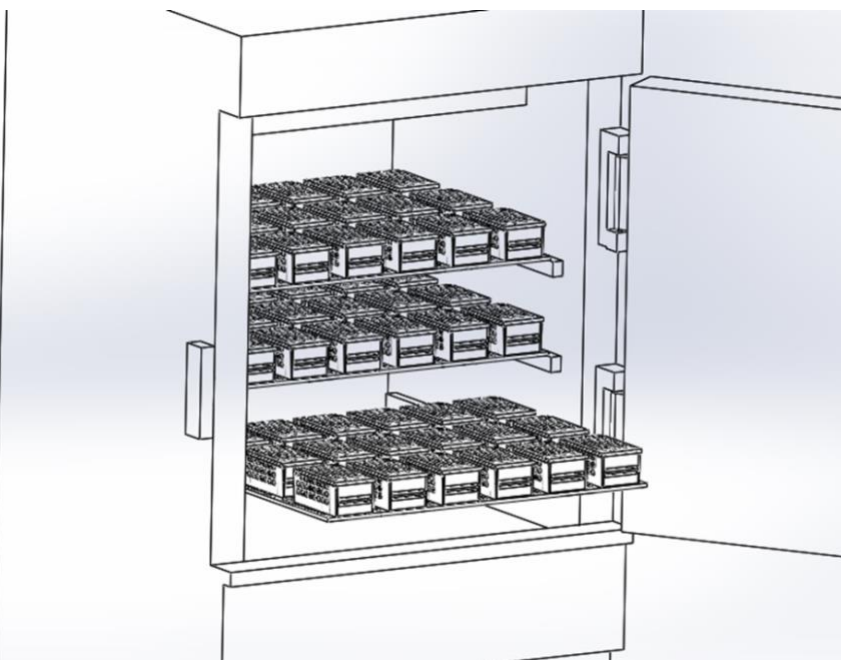


Figure 1. Design of the secure refrigerator system with sliding shelves

Benefits

- » Optimizes airflow for consistent cooling
- » Secure compartmentalized storage with multiple sliding shelves
- » Non-refrigerated section for housing electrical & mechanical components
- » Monitors temperature and dispensing of medicines
- » Reduces need to reset expiry dates of line items

Applications

- » Secure refrigerated storage of:
 - Medicines & vaccines
 - High hazard bacteriological, biological, and viral samples

Patent status:

Patent pending: U.S. and foreign rights are available.

License status:

This technology is available for licensing to industry for further development and commercialization.

Category:

Biomedical

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