Application of Wireless Sensor Networks to Lyophilization for Enhanced Process Monitoring and Control

A wireless, non-invasive sensor network monitors lyophilization conditions in real time to optimize drying, improving the processing of drugs and foods.

Researchers at Purdue University have developed a sensor network that monitors chamber pressure and temperature and estimates the sublimation rate of a solvent during lyophilization. The technology enables optimizing drying in real time, and unlike other methods it is non-invasive, as it does not require temperature probes to be placed into the material. The sensor network is wireless and therefore can be integrated deep into the shelf. Applications for the technology include in lyophilization of drugs and foods.

Advantages:

-Real time tunability of drying

-Non-invasive

-Wireless

Potential Applications:

-Lyophilization

TRL: 3

Intellectual Property:

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