

Inexpensive Crystallinity Detection for Pharmaceuticals and Other Formulations

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Categories:

- Chemistry and Chemical Analysis
- Pharmaceuticals

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- Drug Development
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- Pharmaceuticals

Many of today's modern pharmaceuticals utilize Amorphous Solid Dispersions (ASDs) in an attempt to increase the overall effectiveness of a drug. Unfortunately, compounds using ASDs have the potential to crystallize, changing from an amorphous solid to a crystalline solid over an indeterminate time. Before such a drug can be released, stability studies must be performed to determine the viability of the drug after extended time. This normally requires the compound to be subjected to months of elevated temperature and humidity. This expensive, time-consuming process often leads to major backups in the drug development process.

Researchers at Purdue University have developed a simple, inexpensive method for the detection of trace crystallinity in pharmaceutical formulations. This new method uses the inherent ability of crystalline compounds to support triboluminescence. By transferring kinetic energy to the sample, trace amounts of crystals can be detected by measuring the optical radiation caused by the triboluminescence of the compound. This new method allows for trace crystallinity in new drugs to be quickly and accurately identified by a simple and relatively inexpensive test.

To view a video related to this technology, click on this link: <https://youtu.be/em4n0Q6mWjI>

Advantages:

- Improved drug to market time
- Simple process
- Low material cost

Potential Applications:

- Crystallinity detection

- Optical testing
- Pharmaceutical stability studies

People:

- Simpson, Garth Jason (Project leader)
- Griffin, Scott Robert
- Schmitt, Paul David
- Smith, Casey Jake

Intellectual Property:

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Contact OTC:

Purdue Office of Technology Commercialization
The Convergence Center
101 Foundry Drive, Suite 2500
West Lafayette, IN 47906

Phone: (765) 588-3475
Fax: (765) 463-3486
Email: otcip@prf.org