Electronics Authenticity Testing Using Comprehensive Two-Dimensional Gas Chromatography

Volatile "fingerprints" from components feed a secure database to flag counterfeit electronics quickly and non-destructively.

Researchers at Purdue University have developed a new method for determining authenticity of electronics components using two-dimensional gas chromatography. Electronics release unique volatile gases that vary in age, origin, type, and manufacturer. Fraudulent electronics components pose a cybersecurity risk. Purdue researchers have used analytical tools including solid phase microextraction technology capable of sensing volatile media to create a secure database that correlates off gassing to electronic device authenticity.

Advantages:

-Efficient Authentication

-Secure Database

Potential Applications:

-Electronics Authenticity

-Chemicals Sensing and Detection

-Military and Defense

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Gozdem Kilaz is Associate Professor in the Schools of Engineering Technology (SOET) and Aviation and Transportation Technology(SATT), by courtesy, at Purdue University at West Lafayette, Indiana. She holds B.S., M.S., and Ph.D. degrees in Chemical Engineering. Currently, she serves as the Director of the Fuel Laboratory of Renewable Engineering (FLORE). Her research is focused on transportation liquid fuels and sustainability. She is

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also a faculty member of the Laboratory of Renewable Resources Engineering (LORRE). Gozdem's current projects include the synthesis, certification, and safety of all liquid transportation fuels as well as the analyses of electrochemical solvents utilized in energy systems of the US Navy.

For additional information, please visit Laboratories and Equipment - Fuel Laboratory of Renewable Energy - Purdue University website: https://engineering.purdue.edu/FLORE/research/facilities

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