Method for Detection of Defects in Semiconductors
Using a Novel Multiphoton Microscope

Title: Method For Detection Of Defects In Semiconductors

Invention: This is a system that uses a multi-photon microscope to scan and detect defects in thin films of semiconducting materials including polymers and crystals. The novel detection technique identifies areas exhibiting anomalies for further inspection with 2 micron resolution.

Background: Conventional methods of measuring a spectrum from a sample using multi-photon microscopy (MPM) typically involve setting galvanometers at their highest speed with lowest pixel resolution to scan a whole area quickly. But that imaging technique takes an average of the surface of the sample and does not properly illuminate certain regions for a sufficient period of time to catch all defects. Random sampling also misses many defects.

Applications:
* Defect detection in materials

Advantages:
* Higher detection rate
* Provides analysis of the defect
* Works for silicon wafers, amorphous silicon, thin films of polymers and copolymers, blends that include fullerenes, and semiconductor crystals

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