New Resins for Serial Block-Face Scanning Electron Microscopy

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BACKGROUND

The advent of serial block-face scanning electron microscopy (SBFSEM) promises to revolutionize histology and neuroanatomical research by allowing the 3-dimensional reconstruction of relatively large regions of tissue and cell arrays at near nanometer-scale resolution. In SBFSEM, successive slices are removed from the targeted tissue and an electron beam is scanned over the remaining block-face to produce electron backscatter images. A principal limitation of this approach is that the resolution obtainable using backscatter electron imaging at low accelerating voltage is modest compared to traditional transmission electron microscopy.

TECHNOLOGY DESCRIPTION

University researchers have developed new resins to immobilize tissue samples in Serial Block-face Scanning Electron Microscopy (SBFSEM).

The invention has been demonstrated to lead to dramatic improvements in image contrast and resolution for SBFSEM.

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OTHER INFORMATION

KEYWORDS

serial block-face scanning electron microscopy, SBFSEM, resin

CATEGORIZED AS

- **Nanotechnology**
  - Materials
- **Sensors & Instrumentation**
  - Scientific/Research

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