Multi-Field Miniaturized Microscope

Title: Multi-Field Miniaturized Microscope

Invention: This invention is a miniaturized microscope capable of monitoring a number of multiple fields simultaneously and at different depths. All images can be viewed on a single monitor. The microscope has already imaged a mouse brain and can be adapted for neuroscience, cardiac electrophysiology, and imaging of other tissues, all in real-time and at low cost.

Background: Existing microscopes that are utilized for imaging provide multi-field imaging, but are constrained in how many regions of interest can be observed simultaneously. Such imaging microscopes are also bulky and expensive, and can be awkward to use. There is a need for a miniaturized multi-field imaging system that can view separate regions of interest simultaneously.

Applications:
- Neuroscience
- Cardiac electrophysiology
- Tissue imaging

Advantages:
- Capable of imaging at different depths
- Able to image different locations simultaneously
- Real-time
- Low-cost
- Robust

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