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miniSTORM: Super Resolution Microscopy at Minimized Cost and Maximized Performance

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The therapeutic manipulation of biological processes on a molecular scale, or nanomedicine, is expected to have a significant impact on disease treatment and on the economy. Nanomedicine sales reached $16 billion in 2015, with a minimum of $3.8 billion in nanotechnology R&D being invested every year. Evaluating the efficacy and toxicity of therapeutics on the scale of nanometers and inside of living cells is a major challenge for R&D as well as for scientists in academic research institutions. While technology now exists to visualize biological dynamic processes at a resolution up to 10 nm, obtaining this technology costs upwards of $500,000. We have developed a nanoscope at a cost of $35,000, without sacrificing resolution. Our miniSTORM paves the way for a new age of nanoscopy.

Technology Description

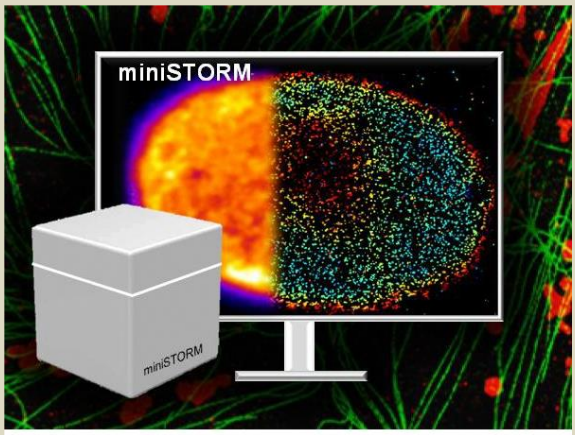
Our miniSTORM is a small, self-contained, portable nanoscope that is composed of cutting- edge optical elements, sophisticated photoelectric devices and optimized analysis platforms to achieve the state-of-the-art single-molecule level imaging results. Its compact design and high efficient active anti-vibration system can guarantee its resolution up to 10 nm without the requirement of dedicated room or optical table. More important, its cost is only $35,000, over 10 times lower than existing options.

Advantages

- >10X lower cost than other options for super resolution microscopy
- Reduced indirect costs – miniSTORM doesn't require dedicated room, optical table and workstation
- All of the above, without sacrificing resolution

Applications

- Nanotechnology/Nanomedicine R&D
- Academic research of biological dynamic processes/structure on the scale of nanometers
- Enhance early detection and diagnosis of disease



miniSTORM portable nanoscope w/ resolution up to 10nm

Stage of Development

Prototyping Stage; System validation has been completed, we are now trying to build prototype system for demonstration to convince the potential customer and get more funding.

IP Status

Provisional Patent Application Filed

Notable Mentions

Pitt Ventures First Gear Program ($3,000) First Gear Pitch top award ($20,000)

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