Portable EPR Sensors for Diagnostic Applications

Description:

This invention will be used to exploit electron-paramagnetic-resonance (EPR) as a new approach for rapid diagnostic tests (RDTS) of diseases such as malaria. The idea is to use Radio Frequency (RF) processes to boost EPR sensor sensitivity by more than 100 times for rapid characterization of a single cell.

This technology boosts EPR sensor sensitivity and time-resolution by orders of magnitude with liquid samples, enables multi-frequency EPR scheme to significantly enhance EPR information, and enables the usage of EPR for diagnostic applications such as malaria. These EPR sensors are quantitative, accurate, portable, easy to operate, and rugged to deploy.

Figure 1: Radio Frequency Sensor for EPR Applications

Applications:

- Point-of-care Diagnostics
- EPR systems as chemistry instruments
- Lab-on-Chip applications

Benefits:

- Non-invasive
- Portable systems
- More sensitive than current EPR techniques
- Low cost

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Licensing Status:	This technology is available for licensing
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