



# Technology Transfer Opportunity

## Magnetophoretic Bionanosensor Technology

### OPPORTUNITY:

A magnetophoretic separation platform technology for use in point-of-care diagnostic, stem cell separation and other applications.

### Value Proposition:

Magnetic separation/purification technologies have become attractive time-efficient alternatives to conventional isolation procedures for biological materials. However, linear magnetophoresis (LM) as it is currently used in the diagnostic industry is not capable of separating multiple analytes and has limited sensitivity due to undesirable aggregate formation of the magnetic beads.

These problems were overcome with the development of non-linear magnetophoresis (NLM). In a further improvement of this technology a continuous laminar flow system was introduced (flow-NLM or F-NLM) to create a fast and sensitive platform for simultaneous separation of multiple biological analytes including cells, proteins or nucleic acids.

This innovative "lab-on-chip" technology is adaptable to point-of-care applications and has the potential to significantly improve early diagnosis of infectious diseases.

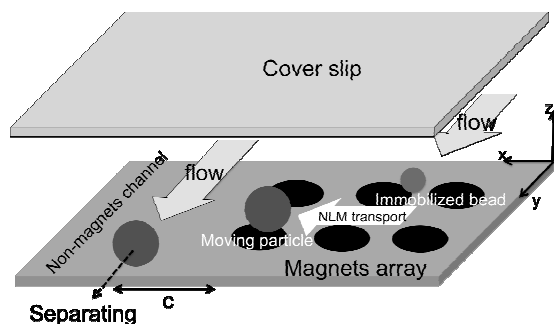


Figure: Schematic of applied F-NLM to separate magnetic particles

This bionanosensor platform promises to provide the following **key features**:

- adaptable for use as POC device
- quantifiable results available in minutes
- simultaneous identification and separation of multiple analytes
- high sensitivity
- suitable for molecular or immunological assays

Potential **applications** include:

- Diagnosis of low level infection with bacterial or viral pathogens
- Bioseparation (e.g. stem cell separation)
- Bioanalytical instrumentation

### Market:

Medical device market, diagnostic market and stem cell industry.

### Inventors:

Professor Gil Lee and Dr Peng Li of UCD School of Chemistry and Chemical Biology.

### Status:

A priority patent application was filed in July 2010. A manuscript was submitted for publication and inventors developing a start-up venture.

### Opportunity Sought:

Available for collaboration or partnering with a start-up venture, OEMs, medical device companies, investors or entrepreneurs.

### Contact:

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