

24 September 2004

## “Swinburne Uni and BioPharmica Biotech Agreement”

BioPharmica has entered into an agreement with Swinburne University of Technology and Dr Paul Stoddart from the Centre for Imaging and Applied Optics to develop a *fibre optic probe* to be used in biosensors for diagnostic testing and drug development.

The *SERS Probe* technology is being developed to enable biosensors to use light as a method to detect and monitor biological and chemical targets on the microscopic tip of an optical fibre.

- SERS (Surface Enhanced Raman Spectroscopy) results in reflections of laser light from a target containing vibrational energies unique to each compound in a sample, enabling scientists to identify the material.
- A biosensor is a device that detects, records, and transmits information regarding a physiological change or the presence of chemical or biological materials. Biosensors integrate a biological component with an electronic component to yield a measurable signal.

Biosensor device manufacturers have seen rapid growth with the 2003 worldwide market for biosensors at US \$ 7.3 billion. Analysts project ongoing growth with the market projected at US \$10.8 billion in 2007.

The commercial potential of SERS is recognised in its promise to revolutionize the biosensor industry, as its light scattering technique to detect and analyse at molecular levels makes it far more selective and accurate than conventional competing technologies.

Global attempts to develop a SERS capable fibre optic probe to be used in biosensors (such as the *SERS Probe* technology) have faced critical hurdles in commercialisation due to reproducibility (repeatability) issues and high cost of production.

When manufactured in high volumes SERS capable optical fibres have not been able to be produced with well-defined and uniform features, with the variation between microscopic fibres being too great. This creates a low level of *reproducibility*, which is unacceptable in manufacturing complex biosensors.

With increasing competition product cost has become a critical success factor, even for companies with high-quality items. Current processes to create fibre optics capable of acting as a SERS probe have a *high cost of production* and thus translate into a much more expensive end product.

The *SERS Probe* technology being developed by Dr Stoddart and his team at the Centre for Imaging and Applied Optics has the potential to overcome these critical issues and enable biomedical device manufacturers to rapidly expand their product development pipeline using SERS capable fibre optic probes.

At the outset BioPharmica has entered into an agreement to provide an initial \$130,000 in funding and assist in the development of the *SERS Probe* technology. Swinburne University will provide infrastructure and patent administration with Dr Stoddart leading technical development of the technology.

Subject to BioPharmica's satisfaction with progress of the *SERS Probe* project, funding will be provided into a joint venture or company structure to further develop and commercialise the technology. For its funding and development assistance BioPharmica will earn up to a 52% interest in the technology and will have first and last rights over future funding.

Managing Director David Breeze said, "Swinburne University of Technology has a long history and involvement in photonics and optical technologies, areas which underpin the discovery made by Dr Stoddart. Swinburne is an important player in Australian photonics and the Centre for Imaging and Applied Optics has a specialist focus on fibre sensors and optical materials."

The SERS Probe technology has a myriad of biomedical applications with the potential to provide biosensor companies with the capacity to rapidly grow and expand what is already an extremely large market.

Upon Dr Stoddart and his team creating the required data needed to prove the technologies reproducibility, biosensor companies can be approached to form alliances and partnerships for commercialisation.

David Breeze

Managing Director  
BioPharmica Ltd

---

### **About BioPharmica Ltd**

BioPharmica is a biomedical commercialisation business partnering with universities, medical institutes and hospitals. Existing product development is targeted at the billion dollar markets for the detection and treatment of breast, prostate and colorectal cancers and the effective diagnosis of infectious diseases caused by bacteria.

The Company is working with the University of Western Australia and Professor Peter Klinken from the Laboratory for Cancer Medicine at the Western Australian Institute for Medical Research. The Institute combines the Royal Perth Hospital, Sir Charles Gairdner Hospital, Fremantle Hospital and the University of Western Australia.

BioPharmica is also partnered with Dr Benjamin Fry and Dr Viraj Nawagamuwa from Diagnostic Array Systems Pty Ltd who are both world leaders in the genetic structure of bacteria. Products are being developed to identify which specific bacterium is causing an infectious disease (such as pneumonia or legionnaires disease) by using the genetic structure (DNA) of bacteria. In using bacterial DNA the testing process can be faster and much more accurate. Treatment is then more effective as drugs are prescribed sooner and for the specific bacterium causing the disease.