

# Dr Andrew Campitelli

## MiniFAB (Aust) Pty Ltd

### **Abstract**

#### **'How to Make a Successful Diagnostic Product from MNT'**

The convergence of micro and nano technologies (MNT) with information technology promises tremendous advances and potential cost reductions for diagnostic applications in a range of different market sectors, including food, agricultural, environmental, pharmaceutical and medical. Medical diagnostics is of particular importance where the demand for low cost, highly accurate and widely available diagnostic tests is ever increasing.

The development of new products based on MNT for the diagnostics market is very often a complex and demanding task. Solutions rely on a combination of factors: development of enabling technologies for the modular components; integration of key components into systems using novel, low cost manufacturing techniques; interfacing of systems to the external environment and most importantly, understanding the requirements of the user community and target markets. To achieve this successfully (both technically and commercially) is a significant challenge and requires the combination of multi skills and disciplines, often residing in multiple partners and companies.

In this presentation, a product development strategy for the realization of MNT based diagnostic systems will be presented. Key is the implementation of a Stage/Gated Product Development Strategy that formalises and schedules the "*idea-concept-labbench-prototype-product*" development journey, meeting exact product and regulatory requirements. The methodology is applicable for both large and small scale product developments, for large corporations, SMEs or research institutions.

Examples illustrating the development of POC platforms in healthcare, integrating disposable microfluidic biosensor cartridges and dedicated instrumentation will be presented.

### **Speaker Biography**

#### **Dr Andrew Campitelli**



Dr. Andrew Campitelli is Diagnostics Manager at MiniFAB (Aust) Pty Ltd, Melbourne, Australia. Andrew has over 15 years professional experience (France, Belgium, Australia) in applied micro and nano technology research and development, product design, biosensor development and exploitation, point-of-care diagnostic systems, project management, team and business creation and leadership, strategic planning. Originally trained as an Engineer, and with a PhD (RMIT, Melbourne, Australia) and post-doctoral stage (CNRS, France) specialising in microsystem based biosensors, Andrew returned to Australia in 2004 after 8 years in Europe. His last role was with IMEC in Belgium as Group Leader of the Biosensor Group, which he established, where he was responsible for the strategic direction and management of the biosensor activity. Andrew has a proven track record in large EC funded projects having been involved as co-ordinator or partner in over 6 major projects (5<sup>th</sup> and 6<sup>th</sup>

Framework). Of note, he was the co-ordinator of the PAMELA European 5th Framework project (IST-1999-13478, 1999-2002, budget of over 2.5 Million Euro) that developed a patient point-of-care system for prostate cancer diagnostics. A key player in the European bio-micro-nano based diagnostics arena, he continues to play an active and well-recognised role within Europe (e.g. author of the NEXUS Roadmap for micro and nano based point-of-care systems, first published September 2003 and consultant to the new EU funded Nanotechnology Roadmap, first published 2006). Andrew is also a member of the Steering Committee for SmartHEALTH, a new 22M Euro EU 6th Framework Integrated Project proposal that aims to develop the next generation POC medical diagnostic platforms, and is a Professional Fellow of the Institute of Nanotechnology, UK. Andrew's role at MiniFAB focuses on the development of new business opportunities in diagnostics based on the fusion of bio, micro and nano technologies.