



UMIC®

The University of Manchester Incubator Company

## NWDA INNOVATION VOUCHER CASE STUDIES

The Incubator Building, 48 Grafton Street,  
Manchester M13 9XX, United Kingdom  
Tel: +44 (0) 161 606 7200  
Fax: +44 (0) 161 606 7300  
Email: [info@umic.co.uk](mailto:info@umic.co.uk)  
[www.umic.co.uk](http://www.umic.co.uk)

*Printed on recycled paper*  
Issue 1 Sept 09



Farfield Group Ltd had patented a new implementation of its optical waveguide based interferometer. However we were not in a position to properly evaluate its potential, which required specific software and the devices to be tested and validated against other techniques. UMIC with the NWDA voucher, helped capture the requirements for turning this new technology into a product. We were provided with a detailed report on the principles of operation of the device and different methods of using it, with suggestions for improvement, implementation, and a software that was used to perform the analysis. This means that transferring the concept to a product will now be a much simpler task. I can thoroughly recommend this scheme.

**-Dr Marcus Swann, Chief Scientific Officer, Farfield Group Ltd**

The whole Innovation Voucher process was incredibly easy to participate in right from the very first stage through to the final days of conclusion.

UMIC was a delight to work with on all aspects of the process. Once we were at the working stage, the wealth and depth of technical expertise became very apparent to us. Accessing this knowledge base was made incredibly straight forward by the University, and all involved were very generous with their time and expertise. I can certainly recommend the process to any company looking to bring in third party expertise to their development cycle.

**-Richard Bardwell, Sharc Ltd**

My research team in the School of Physics, The University of Manchester has an extensive track record of studying ultrathin films, molecular processes at interfaces and development of technical capabilities. Measurements of molecular structure and dynamics at interfaces are highly relevant to many technological applications including sensing, local controlled drug and gene release, immunoassays and molecular therapeutics. The Innovation Voucher Scheme is perhaps a good starting point to test and refine our mutual interests. The Innovation Voucher Scheme offers a high level of flexibility for academic researchers to solve particular technical issues for local SMEs through which the parties can find more about each other and further extensive collaborations could be promoted.

**-Prof. Jian Lu, School of Physics and Astronomy**

Sharc Ltd. was looking for help to develop a parallel version of their Harpoon computational meshing software. Sharc was seeking to take advantage of recent developments in multicore processors to help maintain their competitive edge. Under the Innovation Voucher Scheme, we discussed parallelisation strategies and algorithms with Sharc, giving them an introduction to parallel programming techniques. On the basis of this interaction, Sharc have successfully developed a fast, parallel version of Harpoon based on Message Passing Interface (MPI) programming. The intention is to follow up on this initial fruitful interaction with Sharc in which we will look into the use of General Purpose Graphical Programming Units (GPGPUs).

**-Mr Graham Riley, Research Fellow, School of Computer Science**

## Case Studies

A recently established spin-out company, Process Integration Ltd (PIL), which provides state-of-the-art professional services for process industries, required some essential research work to be done in the field of modelling and optimisation to find an optimal solution for the trade-off between reliability enhancement and process capacity. The search among R&D companies and academic partners showed that the best choice was the Centre for Process Integration (CPI), CEAS, The University of Manchester, which is the world centre of excellence in process integration technologies. PIL applied for the NDWA Innovation Voucher Scheme and having been granted the voucher they used it to pay for the modelling and optimisation work carried out by CPI. Within The University of Manchester, the Innovation Voucher Scheme has been effectively administered by UMIC removing any administrative burden from the SME and academic partnership.

**-Dr Qiying Yin, Director, Process Integration Ltd**

I started to design an alternative carrier for the baby product market in late 2007. I began to realise that in order for the project to move forward I needed a business plan which required a great deal of information and relevant material. I found UMIC after researching on the internet for help with the project. It was brought to my attention that the Innovation Voucher Scheme could help me find the relevant information I needed to produce the business plan. I had a meeting with the academic who was offering the expertise, advice and also had regular communications by email and meetings at UMIC throughout the process. My experience with the scheme is a very positive one and it has also been an extremely informative experience in terms of how to move further with the project.

**-Mrs Rachel Pottage, Director, Rachel Antoni Ltd**

I recently completed work on two different innovation vouchers for UMIC. Both projects fell within my area of research, mass spectrometry. The first, for Instrument Science Ltd. (Crewe, UK), focussed on developing technical literature for one of their instruments. Working with the staff at the company I prepared a user manual and wrote two application notes for their SIFT-MS instrument. This project was successfully completed over the course of two months. Due to the success of this project the company is keen to continue working with UMIC and the research group at The University of Manchester on further projects.

The second innovation voucher was with European Spectrometry Systems (Northwich, UK). For this project I completed a feasibility study for a potential new instrument which the company want to develop and provided them with advice on the design for the instrument. The work was completed over the course of two weeks.

I was attracted to both these vouchers as they offered opportunities to work with local companies who work in my area allowing me to gain industry experience and giving me a chance to use my expertise in a 'real world' environment. Both companies were easy to work with and very keen to get my input into their work. As an academic you can often get somewhat 'lost' in your research, the Innovation Vouchers Scheme allowed me to step back from my work for a short time and think about the potential commercial opportunities offered by my area of science.

**-Dr Bryan McCullough, Michael Barber Centre for Mass Spectrometry**

Nano ePrint has developed a new semiconductor platform for printed logic. We wanted to identify suitable n-type (“electron-conduction”) polymer semiconductors to initiate its activity towards CMOS (matched pairs of n- and p-type circuits) printed logic.

The remit was twofold, firstly to identify and prioritise n-type polymer semiconductors which could be processed in a complementary way to the existing p-type polymers already used. The second aspect was to benchmark these materials against a target specification – the requirements for Nano ePrint’s devices being significantly different to conventional transistors. This led Nano ePrint to Prof. Michael Turner, a leading expert in the field of polymer electronic materials, head of the Organic Materials Innovation Centre (OMIC) within the School of Chemistry, The University of Manchester. He advised Nano ePrint on the current state-of-the-art in n-type polymer semiconductors, produced a hierarchy of materials and identified commercial suppliers. Together we opened discussions with a US-based supplier and agreed legal terms for material evaluation. This led to a joint project to demonstrate the devices with n-type polymer semiconductors which is now ongoing. Nano ePrint will also sponsor a PhD studentship within Prof. Turner’s group, commencing in October 2009.

**-Dr Richard Price, VP of Product Management, Nano ePrint**

Cake Solutions runs the Spring User Group in London and it generates a number of good leads for us. We wanted to replicate that in the North West, so an obvious choice was to set up in Manchester.

Generating a database to market effectively is the hardest part of setting up one of these groups. We contacted a number of organisations to help us with this, one of the main ones being UMIC. We engaged with the UMIC by applying for an Innovation Voucher from the NWDA, which was very easy and painless to apply for and it funded someone from the University to put together a database of potential attendees. The group has attracted the top Java and Spring technologists in the UK to present and the feedback has been excellent to date. The North West is now benefiting from some top quality technology presentations and networking that would never be possible without the group. Cake Solutions has benefitted by an increased awareness of services to companies in the North West many of whom we did not know used the technology we specialise in.

**-Guy Remond, Managing Director, Cake Solutions**



FaceTec Ltd is a company which uses novel technology to personalize advertising and media content, manipulating face images to place in other images. Some of the key techniques are algorithms developed at the University of Manchester. FaceTec wished to perform a detailed evaluation of the current facial feature location system to assess its performance in different scenarios. The work itself meshed well with current research into new methods of facial feature location - we could perform experiments using our software platform relatively easily. A detailed report was written by the RA who did the work, which satisfied FaceTec. Overall it was a fruitful collaboration, as the results informed our own research, and has helped continue good relations with the company.

**-Prof. Tim Cootes, Imaging Science and Biomedical Engineering**

The Innovation Voucher Scheme and UMIC enabled FaceTec to connect with ISBE (Imaging Science & Biomedical Engineering) and fund some research into a particular technical challenge associated with the facial recognition algorithms. Without the scheme it would have been difficult to fund the mini programme and we would certainly participate in another such scheme in the near future.

**-Mr John Bickley, Director, FaceTec Ltd**

Our interactions with the School of Pharmacy have been extremely positive. They bring a 'can-do' attitude to any issue and have been efficient and professional throughout. Being able to access their expertise and state-of-the-art facilities including 300 and 400 MHz NMR machines in a timely and reliable manner is vital to the successful delivery of a number of our projects.

**-Dr Gordon Barker, Business Development Manager, Conformetrix**

The frequent contact with real life problems is necessary to complement my academic life. I have recently collaborated with Feedwater Ltd in the field of water treatment. This is indeed the beauty of consulting: working on practical problems of industrial relevance allowing you to broaden your horizons, learning things for which one would never find the time. It helps maintaining your curiosity alive, but at the same time keeps your feet on the ground.

The Innovation Voucher Scheme provides an additional advantage: the projects are short and quick. No time to get bored.

**-Prof. Nicola Tirelli, School of Pharmacy**

For a small company like ours, accessing UMIC's services makes a huge difference. Being able to access a first-class 'virtual' Medicinal Chemistry function on demand allows us to achieve extremely ambitious development goals yet keep our fixed costs to a minimum.

The team at UMIC brought a wide-range of medicinal chemistry expertise to the table and provided valuable guidance at several key stages of the project. We found them approachable, professional and happy to fit around our specific project needs. Their insight made a real difference to the successful delivery of the project and we certainly plan to work with them on our next development project.

**-Dr Gordon Barker, Business Development Manager, Conformetrix**



Stopford Workshop needed an expert assessment of their prototype LED Growth Chamber and approached UMIC for help. This approach was met with enthusiasm and a good deal of expert guidance before carrying out an extremely effective trial under the NWDA Innovation Voucher scheme. Three carefully chosen species of plant were successfully grown over a trial period and a comparison study carried out between our LED Chamber and a conventional Growth Chamber. The assessment report received was well presented and very informative resulting in considerable design improvement.

Many thanks to UMIC and the NWDA for this much needed help!

**- Mr Barry Gleave, Managing Director, Stopford Workshop Ltd**

