



## **DNAe Chairman Professor Chris Toumazou Awarded IEEE Field Medal in Biomedical Engineering for Outstanding Contributions to Biomedical Circuit Technology**

**London, UK – 27 May 2015** – DNA Electronics ('DNAe'), the inventors of semiconductor DNA analysis technology and developers of a new, revolutionary point-of-need test for serious blood infections, congratulate its founder and Chairman Professor Chris Toumazou who accepted the Institute of Electrical and Electronics Engineers' (IEEE) prestigious 2015 Field Medal in Biomedical Engineering last night. Professor Toumazou's research is dedicated to saving and improving lives through the invention of revolutionary, innovative and disruptive technologies.

The award was presented by IEEE President and CEO, Howard E. Michel at a ceremony during the 2015 International Symposium on Circuits and Systems (ISCAS) in Lisbon. It recognises Professor Toumazou's contributions to biomedical circuit technology which includes the invention of semiconductor DNA analysis and its ability to revolutionise healthcare and save lives.

Commenting on the award Professor Toumazou said: "My research is driven by an acute awareness of areas of unmet medical need, and in identifying how electronic inventions can help. The ability to reduce time to diagnosis in serious blood infections from days to just a few hours using our semiconductor DNA analysis platform can mean the difference between life and death for some patients. I am honoured that the IEEE has recognised my work."

Semiconductor DNA analysis converts a natural biochemical reaction to an electrical signal. Unlike other DNA analysers, the technique does not require bulky optical systems to look at unnatural fluorescent dyes fixed to DNA molecules, and offers major benefits of rapidity, economy and compact DNA analysis. Since 2010, under license from DNAe, semiconductor DNA sequencing has been used in laboratories all over the world and forms the core of Thermo Fisher's Ion Torrent™ bench-top DNA sequencer.

Professor Toumazou's invention of semiconductor DNA sequencing was recognised by the European Patent Organisation's 2014 European Inventor Award for Research, the Institution of Engineering and Technology's highest accolade, the Faraday Medal, and the Royal Society's Gabor Medal in 2013.

DNAe is developing semiconductor DNA analysis technology for use in a pioneering rapid test for serious blood infections leading to sepsis. The test will integrate novel sample preparation technology recently acquired via its acquisition of Albuquerque-based nanoMR Inc. to provide a complete blood-to-result diagnostic solution with actionable results in 2-3 hours. This is a major step forward from current approaches which can take days, in an area where time-to-result is a critical factor.

Professor Toumazou's other 'medical microchip' inventions include the world's first totally implantable cochlear prosthetic for born-deaf children and the first wireless healthcare patch to monitor patients' vital signs remotely, allowing them to be discharged from hospital.

IEEE President and CEO, Howard E. Michel said: "Professor Toumazou is an engineer who has developed numerous medical devices that have revolutionised healthcare. The IEEE is the world's largest professional association dedicated to advancing technological innovation for the benefit of humanity and Professor Toumazou's work was a stand-out contender for the Biomedical Engineering Award in what was a very competitive field."

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### **About DNA Electronics – [www.dnae.co.uk](http://www.dnae.co.uk)**

DNA Electronics Ltd ('DNAe') is commercialising its pioneering semiconductor DNA analysis technology for healthcare applications where rapid near-patient live diagnostics is needed to provide actionable information to clinicians, saving lives by enabling the right treatment at the right time.

Through a non-exclusive license to Thermo Fisher, the performance of DNAe's semiconductor DNA sequencing technology has been proven as the core of the Ion Torrent™ Next Generation Sequencing (NGS) system.

In January 2015 DNAe acquired nanoMR Inc. a developer of a novel system for rapid isolation of rare cells in the bloodstream. DNAe is developing a complete sample-to-result genomic analysis platform combining nanoMR's Pathogen Capture System with its own Genalysis® semiconductor DNA analysis technology. Built into a compact device for use at the point-of-need, the system will diagnose accurately and rapidly what infection a patient has, providing the clinician with actionable information to help select the appropriate antibiotics to treat the disease. DNAe's initial focus is on infectious disease diagnostics, where speed and DNA-specific information can make the difference between life and death. The Company's first test will be a diagnostic for blood stream infections for use in the management and prevention of sepsis.

### **About Professor Chris Toumazou, FRS, FREng, FMEDSci, FIET, FIEEE, FCGI, FRSM, DEng, PhD, BSc**

Professor Toumazou's research is dedicated to saving and improving lives through the invention of revolutionary, innovative and disruptive technologies, including the creation of a leading edge medical research institute as well as spin-out ventures to commercialise his ground-breaking inventions namely DNA Electronics Ltd (DNAe), GENEU and Toumaz Group plc.

Chris is London's first Regius Professor of Engineering, at Imperial College London where he holds a Chair in Biomedical Circuits in the Department of Electrical and Electronic Engineering. He is also Director of the Centre for Bio-Inspired Technology, Founder and Chief Scientist of the Institute of Biomedical Engineering, and Chairman of DNAe. DNAe is developing point-of-need diagnostics for life-threatening infectious diseases, based on Chris' semiconductor DNA sequencing technology. In recognition of this invention he recently won the 2014 European Inventor Award from the European Patent Office, the Institute of Engineering and Technology's highest accolade, the Faraday Medal and was awarded the Royal Society Gabor Medal 2013.

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