



# INTERDISCIPLINARY GRADUATE SCHOOL

SOLVING GLOBAL CHALLENGES THE INTERDISCIPLINARY WAY

## IGS DISTINGUISHED LECTURE (IGS-DL)



**By Prof Anthony P F Turner**

Head of the Biosensors & Bioelectronics Centre, Linköping University

### **Printed Electronic Systems and Single-molecule Electroanalysis**

Quantitative discrimination of the heterogeneities that are implicit in living systems is essential if we are to understand biochemistries in sufficient depth to solve current conundrums. Rare and unusual events are key to many important biological questions and new techniques are required to study individual inter- and intra-molecular events and to discriminate these from the background noise associated with ensemble studies. In addition, single-molecule sensing enables molecular counting and hence facilitates a revolutionary new direction towards calibration-free analytical techniques. Excellent work has been performed with optical techniques, but the power and simplicity of analytical electrochemistry has much to offer and has the potential to be combined with recent advances in printed electronics to deliver simple devices into today's emerging markets. New form factors can be envisaged that provide the basis for next generation intelligent systems. Projected healthcare costs worldwide are simply unmanageable and change is inevitable. It is increasingly recognised that a new generation of diagnostic devices will play a pivotal role in delivering more efficient and improved services with much attention focused on wearable and internetworked analytical devices. However, current technology generally falls far short of the sensitivity and specificity required to make further inroads into understanding complex biochemistries and applying this knowledge to improving quality of life. This presentation will review our recent work on the design of printed electroanalytical instruments and single molecule electrochemistry, and will speculate on possible future developments based on combining these leading-edge technologies.

#### **RSVP HERE**

#### **HOSTED BY |**

Prof Bo Liedberg

Dean

Interdisciplinary Graduate School

#### **DATE |**

Friday, 17 March 2017

#### **TIME |**

**Refreshments:**

1.00pm – 1.30pm

**Talk:**

1.30pm – 2.30pm

(seated by 1.20pm)

#### **PLACE |**

IGS Seminar Room

Blk S2-B3a-01

### **About Prof Anthony P F Turner**

Professor Anthony (Tony) Turner's name is synonymous with the field of Biosensors. He joined Linköping University in 2010, to create a new Centre for Biosensors and Bioelectronics, following a 35-year academic career in the UK culminating as Principal of Cranfield University at Silsoe. In 2016, he was awarded the Ukraine's highest academic honour, the Vernadsky Gold Medal and the Datta Medal by FEBS. He is a member of the Royal Swedish Academy of Engineering Sciences, a Fellow of the UK Royal Society of Chemistry and a Foreign Associate of the USA National Academy of Engineering. He has Higher Doctorates (DSc) from the University of Kent and the University of Bedfordshire, is a Visiting Professor in the UK, Italy, Korea, Japan and China, and has >750 publications and patents (>350 refereed journal papers and reviews) in the field of biosensors and biomimetic sensors with an h-index of 71. He is probably best known for his role in the development of commercial glucose sensors for home-use by people with diabetes, publishing the first textbook on Biosensors in 1987, as Editor-In-Chief of the principal journal in his field, Biosensors & Bioelectronics (Elsevier) and for chairing the World Congress on Biosensors, which he founded in 1990.