

## First Laureate Applied Research

**Project Title:** Nanoelectrochemistry  
**Researcher:** Prof. Richard Guy Compton  
**Country:** England  
**Field:** Chemistry - Nanotechnology  
**Scientific Affiliation:** University of Oxford



### Abstract:

Professor Compton's work seeks to identify and utilize changed chemistry at the nanoscale. He has pioneered 'nano-impact experiments' to allow the characterization of nanoparticles (size, state of adsorption, concentration) and to study electron transfer processes occurring at single nanoparticles. He has also explained how nanotoxicity effects might be understood by considering mass transport effects at the nanoscale. Further the significant change of acid/base behavior on molecules anchored to the surface of nanomaterials such as multiwalled carbon nanotubes has been measured and is the basis of the world's first calibration-free pH meter now developed commercially by Senova.

### Biography:

Richard G Compton is Professor of Chemistry and Aldrichian Praelector at the University of Oxford, United Kingdom. He has broad interests in both fundamental and applied electrochemistry including nanoelectrochemistry.

He has published more than 1200 papers and seven books. The graduate textbook 'Understanding Voltammetry' was published in 2011 by Imperial College Press.

Patents have been filed on 24 different topics including drug detection, gas sensing and analytical food science. The Senova pHit Scanner based on Compton group patents – the world's first calibration-free pH meter – won the prestigious 'best new product' award at PITTCON 2013.

Compton is CAS Visiting Professor at the Institute of Physical Sciences, Hefei and a Lifelong Honorary Professor at Sichuan University. He holds Honorary Doctorates from Estonia and Ukraine and is a Fellow of the RSC and of the ISE. He is the Founder and Editor-in-Chief of the journal Electrochemistry Communications.

