

Andrew Goldsworthy BSc, PhD

Andrew Goldsworthy is an Honorary Lecturer in Biology at Imperial College London. He retired from full time teaching in 2004 but still gives occasional lectures there in specialist subjects such as food irradiation and the (exorbitant) energy cost of modern food production.

He was born just before the Second World War and, after a grammar school education in Wales, obtained a First Class Honours Degree in Botany, followed by a PhD at the University College of Swansea. He then took a lecturing post at Imperial College London where, apart from a short secondment to work in agricultural research and a sabbatical in the USA, he has been ever since.

At Imperial, he acquired a reputation among students for explaining complex subjects in simple terms, for 'out of the box' thinking, and for spicing his courses with unusual lectures such as those on space biology and the scientific basis of acupuncture.

His research and teaching, extend from the physiology and biochemistry of photosynthesis and photorespiration through the biological effects of electromagnetically treated water to the electrophysiology of plants. He also designed an experiment for the Anglo-Russian 'Juno' space mission and is now a member of the Life Sciences Advisory Group for the European Space Agency.

As well as 'regular' scientific papers, mainly on plant electrophysiology, he has written several popular science feature articles for the *New Scientist* on such diverse subjects as 'Why Trees are Green' and 'The Cell Electric' (on the evolution of plant and animal action potentials and the origin of the nervous system).

His interest in the biological effects of electromagnetic fields dates back over 30 years but has only recently come to fruition with the publication of a new theory that explains many of their seemingly weird effects in simple physico-chemical terms. It was first published (mainly in relation to plants) in *Plant Electrophysiology – Theory and Methods*, Ed AG Volkov (Springer 2006). This was followed by an Internet publication in 2007 (which can be viewed on this site) entitled 'The Biological Effects of Weak Electromagnetic Fields', which deals with their effects on humans and animals and, in particular, the dangers from mobile phones.

The article also includes a section that draws attention to the remarkable similarity between the symptoms of electrosensitivity and those of hypocalcemia (low blood calcium). This is interpreted as being due to both electromagnetic fields and low blood calcium removing structural calcium from cell membranes to produce similar

physiological effects. It is argued that electrosensitive individuals may already have a slightly low level of calcium in their bloodstream so that electromagnetic exposure 'pushes them over the edge' and they develop hypocalcemia symptoms. If this is correct, it raises the possibility that conventional treatments for hypocalcemia may remove some if not all of the symptoms of electrosensitivity.

- [Andrew Goldsworthy's page at Imperial College](#)
- [The Biological Effects of Weak Electromagnetic Fields](#), Andrew Goldsworthy, 2007

Selected papers

- [The dangers of electrosmog](#), Andrew Goldsworthy, 2007
- [The Biological Effects of Weak Electromagnetic Fields](#), Andrew Goldsworthy, 2007
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