



# Newsletter and Notice of AGM

**ITEC Group**

Information Technology, Electronics, Communications

28 May, 2003

## ITEC Group Committee, 2002 - 2003

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# Institute of Physics Information Technology, Electronics and Communications Group

## Notice of Annual General Meeting

To be held at 17.30 on Monday 30 June 2003  
at the Institute of Physics, 76 Portland Place, London W1B 1NT

Notice is hereby given that the Annual General Meeting of the Institute of Physics Information Technology, Communications and Electronics (ITEC) Group will be held at 17.30 hours on Monday 30 June 2003 in the Franklin Room at the Institute of Physics, 76 Portland Place, London W1B 1NT.

Nominations for committee members are invited and should be made to the Honorary Secretary, Kevin Hyman at <kevin.hyman@physics.org> before Friday 27 June. The committee normally meets about three times a year. Its work includes organising meetings, encouraging collaborations with other physicists and other institutions, and arranging educational opportunities for schools and colleges.

### AGENDA

- 1) Apologies for absence
- 2) Minutes of the AGM held on 23 October 2001
- 3) Chairman's report
- 4) Honorary Secretary's report
- 5) Election of committee
- 6) Any other business (please notify the Hon Secretary in advance)

If you are interested in joining the ITEC Group Committee or would like more information about its work, please contact the Honorary Secretary, Kevin Hyman, at kevin.hyman@physics.org.

If you cannot attend the AGM but have any issues you would like to be raised at the meeting, again, please contact the Honorary Secretary.

The AGM will be followed by a talk and a light buffet with wine. The talk is entitled ***Could an Electronic System be Intelligent?*** and is to be given by **Professor Martin Smith** of Imperial College.

## Editorial

Very unfortunately, our attempt to hold a meeting in conjunction with this year's Physics Congress failed because delays in issuing the call-for-papers left insufficient time to put a programme together. A consequence of this is that our AGM is now to be held at Institute headquarters on June 30<sup>th</sup> and will be followed by a talk entitled *Could an Electronic System be Intelligent?*, and some wine. I do hope you will be able to attend.

There are vacancies for Committee members as John Hutchinson, who has served the Committee for many years, has not been in the best of health and has decided to resign. The Committee thanks him warmly for his support over the years and offers him their very best wishes.

We were able to arrange a successful visit to QinetiQ at Malvern on February 26<sup>th</sup>, thanks to Mike Uren, and a detailed report is given on Page 7. Nick Wright has planned a Workshop in London, on September 17<sup>th</sup>, on *Wide Bandgap Semiconductors*. Details are given on Page 6 and members may also have received an e-mailed announcement. Do, please, respond to his call for contributions and make this a successful event. We are continuing to collaborate with the producers of *Technogames* (please see below). Any other suggestions or ideas for meetings or other activities will be warmly welcomed by the Committee. Please feel free to contact any officer or member.

We hope you have found and like the Group Web-site: <<http://groups.iop.org/IT/>>. It was used as an example at the Group Chairmen's meeting recently and we wish it to serve members' interests, so do please feed back comments and suggestions.

John Gowar

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The ITEC committee is pleased to announce that it will be supporting the **FIRST Lego League** this year. This is a Schools challenge that will be starting in September, with teams of 7-10 members aged between 11 and 16. Each team has eight weeks to develop a robot to meet a set of tasks. This year's tasks are based on a Mars exploration, tying in with the British Mars Probe programme. The students will use Lego Mindstorms kits to control their robots in the tasks of reaching targets, collecting items and navigating hazards. There will be Area and National Finals, with the overall winners going to Italy for an international fair next year.

In addition to providing sponsorship, we are hoping that members will give direct practical support, both to encourage young physicists and to increase their awareness of the IoP. This may be as mentors to a local team, judging at the competitions, or providing assistance to an e-mail helpline. For details of the FIRST Lego League, visit the web site at <<http://www.firstlegoleague.org>>.

If you are interested in helping, please contact the ITEC secretary at [kevin.hyman@physics.org](mailto:kevin.hyman@physics.org).

## Meetings Planned for 2003

### **Monday, June 30<sup>th</sup> at 76 Portland Place:**

AGM followed by a talk: *Could an Electronic System be Intelligent?* **Martin Smith**

The evening will end with light refreshments and an opportunity to meet other Group members

### **Wednesday, September 17<sup>th</sup> at 76 Portland Place:**

Workshop on *Wide Bandgap Semiconductor Technology*

### **To be arranged:**

A half-day meeting on *Dynamic Firmware*.

A half-day meeting on *Photonics Applications*.

A family visit to *explore@Bristol*.

An evening visit to Jodrell Bank.

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## About the ITEC Group Committee, 2002/2003

### **John N. Hutchinson**

John's CV was not available when the last Newsletter went to press.

As well as being a member of the Institute of Physics and a Chartered Physicist, John Hutchinson is a member of the Institution of Electrical Engineers and a Chartered Engineer, a member of the Institute of Management and an HMI, specialising in engineering and physics in further and higher education. He graduated with a first-class honours BSc from the University of Wales and an MSc(Eng) by research from the University of London. After working initially for four years at RRE, Malvern, John moved into lecturing, and for fifteen years was Head of the School of Electrical Engineering and Physics at Leeds Polytechnic. He acted as an HM Inspector for the Department of Education and Science for five years and now divides his time as an educational consultant and as Head of Physics at Brooke House 6<sup>th</sup>-Form College. His other interests include history, reading and music.

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**Announcing a Workshop on:**

## *Wide Bandgap Semiconductor Technology*

*Organised by the Information Technology, Electronics and Computing (ITEC) Group of The IoP.  
Co-sponsored by the EPSRC Networks: EEENET, GaN Consortium and the Diamond and  
diamond-like Carbon Network.*

To be held on **Wednesday 17th September 2003** at the **Institute of Physics**, London, UK.

The Workshop is jointly organised by:

**Dr Nick Wright**, The University of Newcastle  
**Dr Alison Mainwood**, Kings College, London  
**Dr Ian Harrison**, The University of Nottingham

There will be a programme of invited speakers and the opportunity for 15-minute oral contributions and poster presentations. Those wishing to contribute are invited to submit abstracts of 200 - 250 words, on-line if possible, at

<<http://physics.iop.org/IOP/Confs/WBG>>.

The deadline for receipt of abstracts is **18 July 2003**.

For further information, please contact:

**Claire Pantlin**, Institute of Physics, 76 Portland Place, London W1B 1NT, UK.

Tel: +44 (0)20 7470 4800; Fax: +44 (0)20 7470 4900; E - mail: <claire.pantlin@iop.org>.

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Recent years have seen rapid growth in interest in the wide bandgap semiconductors, GaN, SiC and diamond. The remarkable properties of these semiconductors allows the possibility of substantial improvements over conventional silicon and GaAs devices for a wide range of electronic and optical applications. However, there are still significant problems with material quality and device processing techniques that need to be overcome if wide bandgap semiconductors are to be commercially viable.

This one-day meeting is intended to bring together workers in these fields, from universities, research laboratories and industry, to discuss recent advances in wide bandgap semiconductor technology and thereby increase collaboration in this rapidly advancing subject.

The visit opened with a presentation by Dr Chris West, Director, Sensors and Electronics Division, on some of the advanced research projects being carried out at QinetiQ (formerly DERA, RSRE, RRE, .....). QinetiQ is 51% owned by the Government, there are some staff options and the Carlyle Group hold the balance. Dr West's Division has a staff of 1600 and an annual turnover of £140M. Eleven start-up companies have already been spun off and the organisation seems to be adjusting well to the rigours of the commercial world. Health monitoring, security and low-volume manufacture are key technologies and expertise it can sell. It also supports IC production facilities through the analysis laboratories.

After the initial presentation, we were pleased to be joined by the new CEO of the IoP, Dr Julia King, and Dr Alison Hodge from QinetiQ, who chairs the IoP CEng committee and had organised the programme.

The tour started with a demonstration of the next generation of thermal imagers, which can resolve temperature difference down to 10 mK with high picture quality.

Next was a wide dynamic range camera, which uses CMOS imaging elements to give a logarithmic response, like that of conventional film. This is ideal for surveillance applications, where conventional CCD images are often washed out by bright lights and shadows are too deep to reveal details.

We then split into two groups. One saw the characterisation centre, with an ion etching system to analyse component surface structure and moved on to the electron microscopy section, to see a large number of SE microscopes that offer a commercial service to companies. The other party toured the IC fabrication facility.

The tour ended in the Air Traffic Control simulator, where new algorithms and display techniques were being trialled for the European Air Traffic Centre. These significantly reduce the operators' workload, to the extent that the work can be done by just one person in comparison to the current need for a tactical operator and supervisor for each area.

The visit was rounded off with a valuable discussion covering several areas concerning QinetiQ and the Institute and Physics generally. QinetiQ is home to the largest concentration of IoP members in the UK. The culture change within QinetiQ needed to accommodate the new financial pressures were described by Alison Hodge. She felt it would take a while to complete the transformation, but that the company would compete successfully on an international basis.

Dr King thanked our hosts for the trouble they had taken to provide such an interesting and informative visit. Any member who would like more information about any of the topics mentioned, please contact the Committee or Dr Hodge at QinetiQ Malvern.

