

CNRS Researcher Chris Ewels awarded prestigious European “Marie Curie Excellence Award” 2006

Dr Chris Ewels, CNRS Researcher at the Institute of Materials in Nantes, is one of this year's five winners of the prestigious European « Marie Curie Excellence Award ».

Marie Curie Excellence Awards aim to give public recognition to outstanding past achievements of scientists who have reached a level of exceptional excellence in their given field. The winners are selected by a prominent Grand Jury, and a special Awards Ceremony is to be held in Lausanne at the Ecole Polytechnique Federale de Lausanne on November 16th to honour the winners.

“The Marie Curie Awards not only pay tribute to the great Polish scientist, but also aim at recognising European excellence in science and at making European researchers proud of their profession, in the broader framework of our initiatives to improve researchers' status in Europe”, said Philippe Busquin (Member of the European Commission with responsibility for research (1999-2004)).

Chris Ewels began his research career in the UK and has spent the last five years working in France (initially at ONERA, then Université Paris Sud, before taking up a CNRS post at the Institute of Materials in Nantes). He is the first researcher from either France or the UK to receive this award.

His research is in the newly emerging field of nanotechnology. Nanotechnology is the study of materials at the scale of the nanometer (the scale of large molecules). At this scale materials can exhibit remarkable properties. For example carbon nanotubes, small tubes of carbon 100,000 times thinner than a human hair, are over 100 times stronger than steel yet only around one sixth of the weight.

“Nanotechnology holds the promise of doing more with much less”, says Chris, “by controlling the structure and design of new materials at the atomic level, we are hoping to make new materials that could make planes lighter and more efficient, solar cells cheaper and more effective, and chemical production cleaner and less polluting. Researchers in the CNRS are playing an important role in the development of this new field, that will hopefully contribute towards the development of a sustainable future for Europe”.

His particular speciality is computer modelling of the behaviour of the atoms in materials such as graphite, silicon or carbon nanotubes when they are disturbed, for example by heating, radiation damage in a nuclear reactor, or chemical attack. “Our new computer models allow us to explain how materials such as graphite, silicon or carbon nanotubes change, atom by atom. The scale is so small it's not really possible to ‘see’ these things in experiments, so the result is a good partnership – our computer models help to explain the experimental results and make suggestions for future experiments to try”.

At the same time he is involved in science communication. He worked for several years for the Vega Science Trust, producing science TV programmes and broadcasting them for free over the Internet. He also produces nanotechnology related art, which can be seen on his website. His images have been exhibited in galleries and used in books, journals, and TV adverts.

“It’s a real honour to receive the award!”, says Chris. “My career has taken me all over Europe, and it’s great to receive this European level recognition of my work”. Now settled in Nantes, he is very happy to be working in France. “The CNRS is almost unique worldwide in its structure and freedom for science researchers”, he says.

Relevant Links and Contact Details

Introduction to Nanotechnology

ftp://ftp.cordis.lu/pub/nanotechnology/docs/nano_brochure_en.pdf

<http://www.nanotec.org.uk/finalReport.htm>

Chris Ewels

Personal website (in English, some French), includes many nanotechnology images

www.ewels.info

Contact Details :

ewels@yahoo.com

Tel: +33 (0) 2 40 37 64 07

Fax : +33-2 40 37 39 91

Institut des Materiaux, CNRS UMR6502, 2 rue de la Houssiniere, B.P.32229, 44322 Nantes.

The Institute of Materials, Nantes

www.cnrs-imn.fr

Institute Head: Professor Serge Lefrant, Serge.Lefrant@cnrs-imn.fr

Head of Group: Professor Olivier Chauvet, Olivier.Chauvet@cnrs-imn.fr

Adresse : 2 rue de la Houssinière B.P.32229, 44322 Nantes cedex 3 - France

Tél. standard: +(33) 02 40 37 39 39

Télécopie : +(33) 02 40 37 39 95

The CNRS Press Officer for Bretagne/Pays de la Loire at Rennes:

Cecile Yven

Cecile.Yven@dr17.cnrs.fr

<http://www.dr17.cnrs.fr/>

Contact at the European Commission:

Pascale Dupont (Mrs), Pascale.Dupont@cec.eu.int

Project Officer, European Commission, Scientific Excellence Promotion

European Commission / DG Research/ The Human Factor, Mobility, Marie Curie Actions

Visiting address : Square de Meeûs 8 - 1050 Brussels

Postal address : B-1049 Brussels

Tel. 0032-2-299.04.11

Fax 0032-2-296.33.08

Webpages detailing previous winners in 2005, 2004 and 2003:

http://ec.europa.eu/research/fp6/mariecurie-actions/news/headline34_en.html

http://ec.europa.eu/research/fp6/mariecurie-actions/news/headline31_en.html

http://ec.europa.eu/research/fp6/mariecurie-actions/news/headline20_en.html

Marie Curie Excellence Awards at the EU:

<http://cordis.europa.eu/mariecurie-actions/exa/home.html>

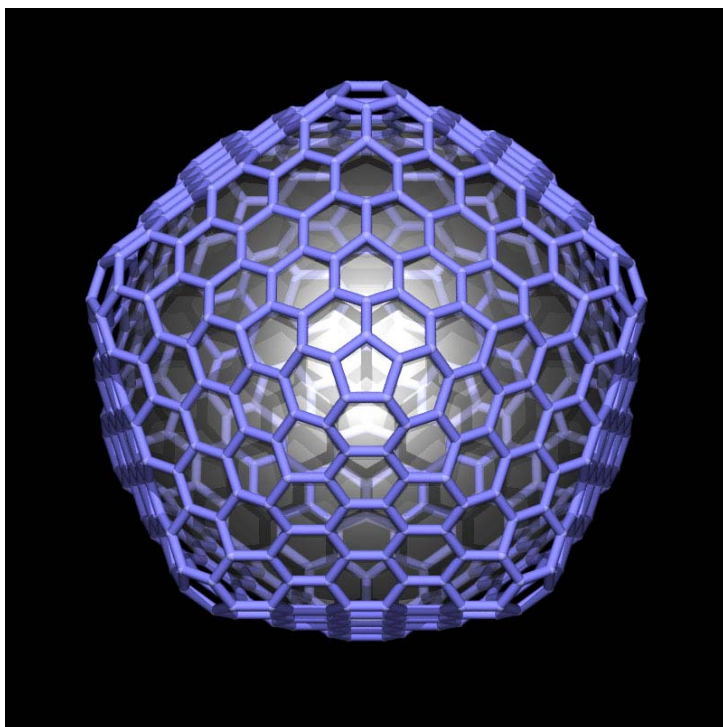
Images available for use

Permission is granted for the use of these images, purely in accompaniment with any article or feature covering the above press release. Image use for any other purpose should be cleared with Chris Ewels, ewels@yahoo.com

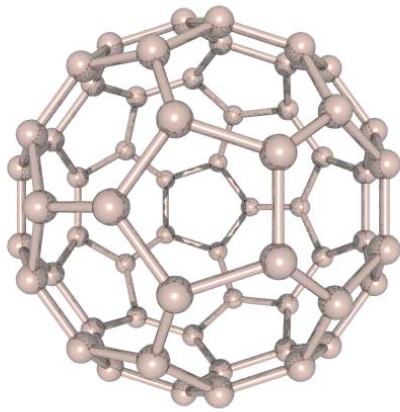
Chris Ewels:



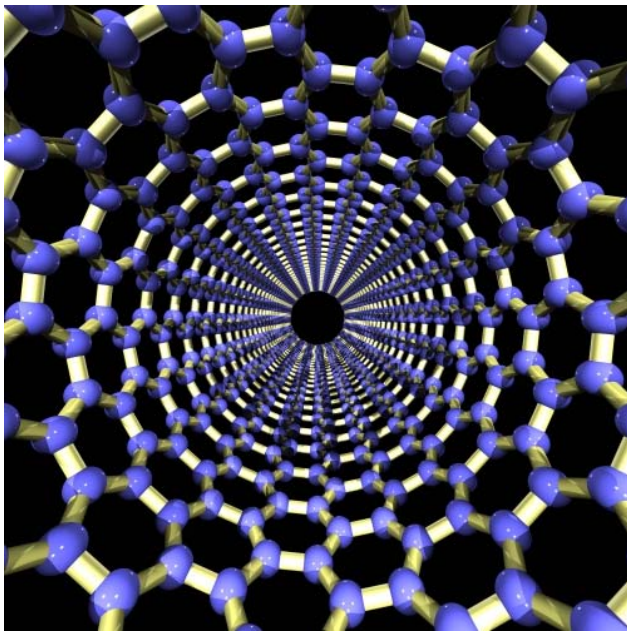
Some images from his research:



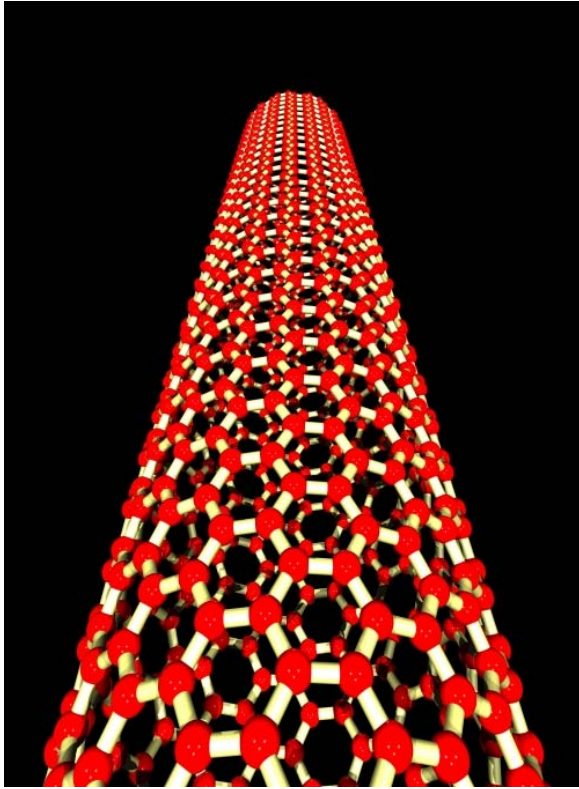
A “carbon onion”, a molecule made from a cage of carbon atoms



C_{60} , the elegant “Buckminsterfullerene” molecule made from 60 carbon atoms. Arguably this is the molecule that sparked off research into nanotechnology.



View along the axis of a carbon nanotube (a molecular cylinder made of carbon atoms, shown here schematically in blue). Such molecules are over 100 times stronger than steel, yet are less than a sixth the weight. The diameter of this tube is less than 100,000 times that of a human hair.



Another view of a carbon nanotube (this time seen from above), atoms shown in red.