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UNIVERSITY OF WOLLONGONG

Wednesday, 22 December

CAMPUS NEWS

Leading superconductivity team chooses Wollongong

The leading superconductivity research team on the Pacific rim outside Japan has chosen to relocate from the University of NSW to the University of Wollongong.

It is considered by some to be at the forefront of the field in the world and is one of the most significant research teams in Australia, made up of approximately 20 academics, research fellows and postgraduate students headed by Professor Shi Xue Dou.

Superconductivity is the state that some materials assume at extremes of temperatures when their thermal, electrical and magnetic properties become strikingly different to those at normal temperatures.

This phenomenon was discovered in 1911 by a Dutch physicist Heike Onnes, who found that the electrical resistivity of a mercury wire suddenly disappears when it is cooled to -269 °C.

Professor Dou's team was the first in Australia to make three classes of high temperature superconductors.

They have demonstrated the feasibility of superconductors for commercial exploitation and a view is that their achievements may far exceed the best of the Japanese industrial efforts.

The team has research grants in excess of $4m and has obtained two patents and filed a further five patent applications.

They collaborate with more than 25 research teams worldwide and have industry links with Metal Manufactures, Pacific Power and the Northeast Electric Power Corporation in the People's Republic of China.

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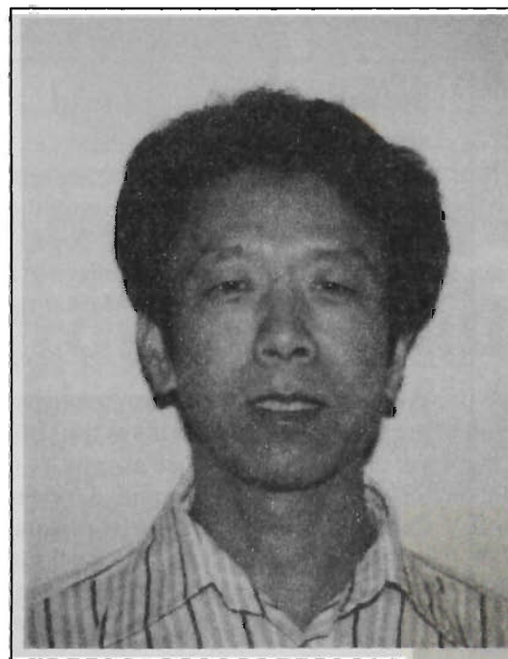

Professor Shi Xue Dou

Team member Associate Professor Liu

Happy Christmas

This is the last issue of Campus News for 1993. We wish you and your families a happy and safe holiday break. Campus News will resume in the new year.

Discussion document on sexual relations released

The Women's Collective at the University has released a discussion document 'Campus sex: a cause for concern?'.

Intended to encourage awareness and debate, the document deals with the problems of conflict of interest and abuse of trust that arise from some sexual relationships on campus.

It does not attempt to set policy or tell people how to behave.

The aim is to promote awareness and discussion which is the best way to prevent problems.

The leaflet has been produced by the EEO Sexual Harassment Sub-committee at the University of Wollongong for circulation to students and staff.

Copies have also been sent to equal opportunity units at other universities as well as to interested individuals and groups.

Other organisations are welcome to use the leaflet, photocopying or printing it with modifications as appropriate, giving suitable credit to the EEO Sexual Harassment Sub-committee, University of Wollongong.

Committee members involved in producing the leaflet were: Rebecca Albury (Sociology); Maureen Bell (Centre for Staff Development); Faye Franklin (Equal Opportunity Unit); Maxine Lacey (Counselling); Peg MacLeod (Equal Opportunity Unit); Brian Martin (Science and Technology Studies); Viviane Morrigan (Science and Technology Studies); Terrie-Lynn (Women's Collective).

Enquires about the leaflet and the Sub-committee's experiences with this issue should be directed to:.

Terrie-Lynn, phone 21 3781; Rebecca Albury, phone 21 3630; Maureen Bell, phone 21 3946; Brian Martin, phone 21 3763; Viviane Morrigan, phone 21 3691.

Academic promotions

Promotion to Associate Professor from 1 January 1994:

Dr T Chandra, Materials Engineering
Dr B Harper, Education
Dr P Laird, Mathematics
Dr J Panter, Centre for Staff Development
Mr R Pretty, Creative Arts
Dr T Romm, Management
Dr A Schultz, Creative Arts
Dr C Woodroffe, Geography

Promotion to Senior Lecturer from 1 January 1994:

Dr G Barwell, English
Dr S Beder, Science & Technology Studies
Dr J M Brown, Biomedical Science
Dr K Chowdhury, Economics
Dr P Cooper, Mechanical Engineering
Dr A Davis, Biological Sciences
Dr L Harrison, Public Health & Nutrition
Dr L Head, Geography
Dr B Indraratna, Civil & Mining Engineering
Dr J McQuilton, History & Politics
Dr G Naghdy, Electrical & Computer Engineering
Dr S Reglar, History & Politics
Dr S Rowley, Creative Arts
Dr M Samandi, Materials Engineering
Dr M Sheil, Chemistry
Ms J Steele, Biomedical Science
Ms I Stein, Nursing
Ms N Temmerman, Education
Dr M Walker, Biological Sciences
Dr H Wijewardena, Accountancy
Dr A Wilson, Chemistry
Dr A Young, Geography

Marketing services and service quality course

The Illawarra Technology Corporation, Training and Education, and the University of Wollongong's Department of Management are offering a short course in Services Marketing and Service Quality.

The course will be held each Wednesday from 5.30-8pm commencing 16 March for 10 weeks at the University of Wollongong Campus.

Services Marketing and Services Quality is designed to assist companies to gain an effective edge over the competitors, enough to make a significant difference in customer's buying process.

In today's highly competitive and open market place, customer expectations of the campanies and organisations they are dealing with are often let down by the lack of effective selling and follow-up. This course is designed to facilitate a more effective response to potential sales.

By taking advantage of an early enrolment scheme, students can receive generous savings on the course cost. The course fee is $695 however, if students enrol before 30 December they pay only $595.

To register or for more information, call Michelle Pieri on 26 8884 or Neil McIntyre on (02) 370 6650.

New Zealand gift

The Sydney Consul General for New Zealand, Mr Paul Cotton, visited the Department of English on 27 November to present two boxes of books to the New Literatures Research Centre.

These contained new writing and some hard-to-get older material and will be a useful addition to library holdings in the University and centre collections.

The centre's Acting Director, Dr Paul Sharrad, accepted the donation, expressing gratitude for the continued link with the consulate as a sign of its recognition of Wollongong's unique offering of studies in a range of New Zealand film and writing.

Japanese honour

Dr Marguerite Wells, Department of Modern Languages, has been awarded the Seizan Fukami Postdoctoral Fellowship.

This travelling scholarship allows her to spend her study leave in first session of next year in Japan as Visiting Researcher at the Kyoto University Research Institute for Humanistic Studies and at Curtin University of Technology in Perth.

Job opportunities trickling in

Many advertisements for graduate positions for employment in 1994 are arriving late this year.

Details will be distributed to departments and faculties and displayed on the careers noticeboard, departmental/faculty noticeboards and also posted to NetNews.

Advise any students you know who are completing studies and looking for employment to watch the careers and departmental/faculty noticeboards regularly.

Presentation for 1994 University Games

At the first National University Games in Brisbane a scroll of honour, called a traditum, was presented in lieu of a flame, flag or other Olympic-type symbol.

The scroll is held by the host university.

This scroll was presented to the Chancellor, Dr RM Hope, to mark the selection of the University of Wollongong as the host for the games from 25-30 September 1994.

One of the University's scholarship holders and Australian Hockey representative Melanie Dempster presented the scroll at the University Council lunch.

A promotional video for the games was also launched on this occasion.

University companies in computer training alliance

Two of Australia's leading university companies have joined forces to offer a comprehensive range of computer courses for industry and government in Sydney and Melbourne.

Illawarra Technology Corporation Ltd (ITC), the business arm of Wollongong University, has formed the new alliance with Technisearch Ltd, the commercial company of the Royal Melbourne Institute of Technology in Melbourne.

ITC and Technisearch last week signed an agreement of cooperation for computer training programs developed by Technisearch.

In Sydney, the courses will be delivered through ITC's Training and Education division.

ITC Managing Director, Mr Jim Langridge, said the alliance was a major breakthrough for both organisations and offered significant training benefits for the public and private sectors.

'No single university can provide computer training skills for information technology services across state borders,' Mr Langridge said.

'ITC and Technisearch are taking the lead here by cooperating rather than competing to meet the needs of government and industry.

'The winners will be our clients. It should not be up to industry or government agencies to chase about seeking quality training courses that meet their needs.

'Through this alliance we can now offer them a package of excellent computer courses backed by two of Australia's finest training companies.'

ITC and Technisearch together provide a full suite of training courses, from basic computer literacy to advanced programming.

ITC has recently expanded its courses from a base of "C", UNIX and network courses to include a range of PC-based applications, including word processors and spreadsheets.

Technisearch has for more than 10 years offered a full range of application training covering most DOS and Macintosh programs, and is active in the development and presentation of quality computer training and consulting services.

Mr John Baker, who will market the ITC courses in Sydney, said: 'There is a natural fit in our styles and way of operating.

'The product ranges are complementary and because we are both university companies there is a mandate to maintain strict quality standards.'

The agreement signed by ITC Training Manager, Ms Kathy Jones, and the manager of Technisearch's Information Technology Group, Mr Peter Budd, enables the two companies to deliver one another's products throughout south-east Australia.

'This makes good sense because of the high up-front cost in developing and upgrading computer training programs,' Ms Jones said.

'By collaborating we save development costs, deliver a quality product and pass the cost savings to our clients.'

Mr Budd said: 'The alliance enables both companies to broaden their range of products and services, offering nationally-based companies a standardised training program that can be further tailored to their individual needs.

'With all enterprises looking to information technology to provide productivity and cost savings, training alliances such as this provide the ideal environment for effective education and consulting services across a wide range of business needs.'

Enquiries: in Sydney, Kathy Jones, phone (02) 370 6650, or in Melbourne, Peter Budd, phone (03) 660 5100.

Top superconductivity team chooses Wollongong

From page one

The Faculty of Engineering has a strong commitment to developing centres for eminence in advanced materials science and engineering as well as in steel making and processing.

The new centre will be a significant addition to the already exisiting high levels of research and teaching activities within the Department of Materials Engineering.

Dean of Engineering, Professor Rozgonyi, has been working on this project for more than a year since Professor Dou applied for a Chair within the Faculty of Engineering.

Professor Dou's team will be closely associated with the Department of Materials Engineering and will be the basis for a Centre for Superconducting and Electronic Materials which will also draw research staff from Physics and Mechanical Engineering.

The centre is also expected to work closely with the departments of Chemistry, Electrical Engineering and Mathematics.

This centre will immediately more than double the Faculty of Engineering's research activities in the areas of ceramic, electronic and magnetic materials which are of significant commercial importance to modern technology.

It will increase the possibility for international cooperation with prestigious universities and research institutes and will widen the postgraduate research and educational activity at the highest level.

Research activities will concentrate on the development and manufacturing of superconducting wires and tapes for the electrical and electronics industry, the development of ceramic electolyte materials for ceramic fuel cells, the development of new electrode materials for new energy storage batteries and the development of new magnetic materials for permanent magnets.

Excellent progress has been made on HTS wires; long superconducting wire up to 50m has been fabricated with a critical current density of 8,500A/cm2 at liquid nitrogen temperature.

MM Ltd has decided to build a pilot plant for scaling up of production of HTS wires.

The team has been very successful in obtaining research funding. Funds totalling more than $1.5m have been obtained by this group in 1993.

It is the only team to be awarded two consecutive GIRD projects as well as winning three ARC fellows in two years.

The research program on new electrode materials is very promising. Four researchers are working on this area.

Two patents on maintenance-free batteries have been filed.

An industrial partner, Pacific Dunlop, ENG Battery Technologies is very interested in these inventions.

Nickel-hydrate materials developed by these researchers will have a significant impact on energy and environment problems in the future.

Jervis Bay endangered species studied by satellite

E C O T A L K

AUSTRALIAN FLORA AND FAUNA

John Marthick from the Australian Flora and Fauna Research Program is using satellite images to study ground parrots.

His postgraduate research involves the use of the Landsat Satellite Thematic Mapper which has a ground resolution of 30 metres.

Using a computerised Geographic Information System (GIS), John can detect subtle changes in vegetation and map 30 square metre areas of heath, clumps of trees and regrowth after fire.

The infra-red spectrum can distinguish different types of heath and the time since the last fire.

This may be important to understanding the habitat requirements of the endangered ground parrot which occurs at Barren Grounds Nature Reserve, on the plateau west of Jamberoo, and at Jervis Bay.

Mr Marthick has set up a GIS to store and manipulate environmental data from Barren Grounds.

He has digitised maps of soil, geology, vegetation and bushfire boundaries as well as the recorded sightings of ground parrots.

He has added contour data to the system and from the contours has computed maps of slope, aspect and altitude. By using different combinations of environmental data, maps can be produced.

For example, Mr Marthick can show only the areas of closed heath last burnt between three and 10 years ago which have a northerly aspect.

As researchers discover more information about ground parrot habitat preferences, the GIS can be used to predict areas of ideal habitat which will assist in the management of areas where this endangered bird occurs.

Other students at Wollongong are using satellite and GIS technology to study endangered plants.

Katie Gradon mapped the known distribution of *Grevillea barklyana* in the Jervis Bay region.

She then looked at environmental factors in the whole region and produced a GIS. By using the system and writing models she was able to predict the potential distribution of this species of plant.

Satellites cannot be used to count individual plants or parrots – yet!

However, habitat mapping is a very important scientific tool which is greatly assisted by the computer and satellite-based research being conducted at the University of Wollongong.

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