1100548

# INFORMATION FOR CANDIDATES

for appointment as

Lecturer in Chemical Oceanography
(Confirmation Path)

## DEPARTMENT OF CHEMISTRY

### Department of Chemistry

Established in 1871, the Department of Chemistry at Otago is the oldest Chemistry Department in New Zealand. It currently teaches 447 effective full-time students, and is a separate administrative unit within the Division of Sciences. There are currently 19 full-time academic staff, 23 full-time administrative and technical staff, and 21 full-time research staff including post-doctoral fellows. In addition, embedded within the Chemistry Department are the Plant Extracts Research Unit, a joint venture with Plant and Food Research, and the Centre for Chemical and Physical Oceanography, a joint venture with the National Institute of Water and Atmospheric Research. The Department has a rich research culture, with a strong focus on research excellence and a very good record in attracting external research funding.

### Undergraduate Programme

The Department offers programmes leading to the undergraduate degrees of BSc (three years) and BSc Hons in Chemistry. Two first-year chemistry courses are offered, one of which is part of the first-year programme in Health Sciences. Students majoring in Chemistry can choose from four 200-level and eight 300-level courses covering a wide range of chemical interests. The BSc (Honours) programme consists of lecture or tutorial-based courses, together with a substantial research component. This one-year programme is available to BSc graduates with a suitable grade-point average. BSc graduates may also complete an additional year with a reduced research focus by admission to the Postgraduate Diploma in Science.

### Postgraduate Programme

This comprises a two-year Master of Science (one year of course work and one of research) and a three-year PhD programme (entirely research).

### Enrolments in Chemistry

Student enrolments for the 2010 academic year were approximately

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|---|---|
| 100-level | 1800 |
| 200-level | 135 |
| 300-level | 70 |
| 400-level (Hons/MSc courses) | 21 |
| MSc/PhD research | 60 |

**Departmental Research Activities and Interests**

The Department has a very strong research focus and currently attracts over $NZ2M per annum in external research funds from a variety of sources, including the Marsden Fund, Health Research Council and the Ministry of Science and Innovation. As well as individual research interests, most staff also contribute to collaborative research through contributions to the following major research themes in the Department:

- Functional Molecular Materials
- Biological Chemistry
- Marine and Freshwater Chemistry

The Department has active collaborations with other universities in New Zealand, Australia and elsewhere, and various Crown Research Institutes (CRI) in New Zealand, which provide access to research facilities not available in Dunedin. These activities include:

- Polar Environments
- Formulation and Drug Delivery
- Lasers and Applications
- Oxidative Stress in Health and Disease
- The MacDiarmid Institute for Advanced Materials and Nanotechnology, a National Centre of Research Excellence
- Joint NIWA-University of Otago Centre for Chemical and Physical Oceanography (based in the Department)
- Plant Extracts Research Unit (PERU), a research group of CRI Crop and Foods Ltd, based in the Department
- Industrial Research Ltd, a CRI for materials chemistry

Of particular relevance to this appointment is the close relationship fostered with the National Institute for Water and Atmospheric research (NIWA). A joint NIWA-University of Otago Centre for Chemical and Physical Oceanography was established in 1996, and has been outstandingly successful in the past 15 years. Researchers from this centre were primarily responsible for Otago being ranked by Thomson-Reuters as the top Oceanographic Research institution in the world for 2000 – 2010.

Two current research strengths of the group are trace element biogeochemistry and the marine CO2 system (http://neon.otago.ac.nz/research/mfc/programmes/programmes.htm).

**Services and Equipment**

The Chemistry Department offers excellent technical services and facilities including in-house mechanical, electronic and glassblowing workshops, and an internationally-renowned micro-analytical service. The Department operates a collegial, open-access approach to the use of the wide range of modern equipment available, including 500 and 300 MHz NMR, FTIR, UV-vis-NIR, laser Raman and photoacoustic spectrometers, surface photovoltage spectroscopy, surface tension and contact angle measurements, LC and isotope ratio mass spectrometers and electrochemical facilities. The Department has a Bruker Apex II single crystal area detector X-ray diffractometer, a TA instruments Q2000 DSC and a Q50 TGA, a Bruker MALDI-TOF mass spectrometer and an Agilent GC-MS system.

The marine/environmental research group is particularly well-equipped for geochemical analyses with five light isotope mass spectrometers (Thermo Delta Advantage, Delta XP and Delta V, Micromass IsoPrime and Europa 20-20) and a Picarro water analyser. Peripherals include 3 EA's, TC/EA, GasBench and GC-c. The trace element centre boasts Nu Plasma MC-ICPMS and an Agilent 7500 quadrupole ICP-MS with a New Wave laser ablation accessory. The facility is housed in a purpose-built laboratory including a class-10 cleanroom. The CO2 group has developed world-class facilities for the determination of the analytical parameters of the marine carbonate system that are used routinely both in the lab and as ocean-going equipment. These include an equilibrator/irga system for pCO2 analysis, spectrophotometric pH systems, coulometric DIC system and alkalinity measurement ability.

The co-operation with NIWA enables participation on ocean cruises using their 70m, ice-strengthened vessel RV Tangaroa. Other relevant NIWA facilities available include a trace metal clean container lab, 6km of Kevlar hydroline, seabird 12 bottle trace metal rosette, clean towed fish system and in situ McLane pumps.

Marine teaching and research is supported by several other facilities within the University including the Polaris II, a 21m research vessel which has a range of 1000 nautical miles.

**Duties and Responsibilities**

The successful candidate, who will be responsible to the Head of Department, will be required to contribute to undergraduate and graduate teaching in their relevant specialist area(s) and to general chemistry at the first year undergraduate level. They will also contribute to the active research culture of the Department, conduct research, publish results in peer-reviewed scientific journals and supervise postgraduate students. All members of staff are strongly encouraged to support their own research and that of their students from external funding sources.

**Conference and Study Leave**

Generous provisions are made for Conference and Study Leave (see website). Grants for travel to conferences within New Zealand and overseas are provided from a fund administered by the Pro Vice-Chancellor of the Division of Sciences.

**Equal Employment Opportunities**

The Department is committed to diversity in staffing and encourages applications from women and other under-represented groups. Parental leave without pay of up to 52 weeks and paid parental leave of 12 weeks may be granted to female or male employees with at least one year's service. New Zealand citizens may also receive additional entitlements. Childcare facilities covering the period from birth to eight years of age are available on the Campus (at the staff member's expense).

**Appointment Information**

The successful applicant will be expected to take up appointment as early as possible after 1 July 2012. Applicants are asked to indicate an approximate date they would expect to be available.

The position is advertised at the Lecturer level. A particularly well-qualified candidate could however be considered for appointment at the level of Senior Lecturer. Note that in North America, Lecturer equates to Assistant Professor, and Senior Lecturer to Associate Professor.