THE NANJING PROFESSORSHIP OF TECHNOLOGY AND INNOVATION

DEPARTMENT OF ENGINEERING

1 The Professorship

Background

There are a number of flourishing research links between academics in the Department of Engineering and both commercial and academic research groups in the Nanjing area of China. The University of Cambridge has collaborated with the Nanjing International Healthcare Area Investment & Development Co (NIHA) to establish a research and development centre in China, known as the “Cambridge University – Nanjing Centre of Technology and Innovation”.

As part of these arrangements, the university intends to establish a new professorship, to be known as the “Nanjing Professor”. The holder of the professorship will be based in Cambridge, but will be expected to provide significant leadership to the Centre as its initial Academic Director. It is anticipated that the Academic Director will spend a minimum of three months each year in China at the Centre.

Selection Criteria

Candidates will be considered for the Professorship on the basis of the following selection criteria, which they should address in their application.

- A proven track-record of leadership of industrial collaborations, particularly in the context of the University of Cambridge research ecosystem.

- Fluent speaker of Chinese as well as English. Able to lead and manage teams in the context of both cultures and to work with cross-cultural teams.

- Familiar with the commercial and academic context of Nanjing in China as well as Cambridge in the UK.

- A proven track-record of academic and applied research in theoretical and experimental condensed matter physics, semiconductor devices and materials. Expertise in all the following areas is particularly required. Holographic displays, spatial light modulators, liquid crystal on silicon devices, wavelength selective switches for all optical networks, nanoparticle photonic crystal
sensors, GHz/THz tuneable dielectrics and phase devices including compact phase shifters and filters.

- The vision, leadership experience and enthusiasm to build on current strengths in maintaining and developing a leading research presence, and an established record in attracting research grant support to further this development.

- The person elected to the Professorship will be expected to accept appointment as the first Academic Director of the Cambridge – Nanjing Centre, in Nanjing, China. It is therefore a requirement that the person elected has the ability to further the academic planning and strategic development of the Cambridge Nanjing Centre.

- The ability to manage and interact effectively with staff and students at all levels.

- An enthusiastic commitment to the recruitment, training and mentoring of the next generation of researchers, including undergraduates, research students, and postdoctoral research fellows

Candidates will hold a PhD or equivalent postgraduate qualification.

2 The Department of Engineering

The Department of Engineering at the University of Cambridge is a vibrant and leading international centre for research. The three best-regarded world rankings place Cambridge as number 1 outside the USA for Technology. The UK Research Assessment Exercise 2014 placed the Department second in General Engineering. Ninety percent of the research submission was judged to be either world-leading or internationally excellent in terms of originality, significance and rigour. These results reflect the excellence of individuals comprising the Department’s 140-strong faculty and also show the power of uniting these academics in a single integrated department. The Department spans a wide range of engineering disciplines and, within this one department, academic staff can easily team up to work collaboratively to address the world’s most pressing challenges in Engineering.

The Head of the Department is Professor Richard Prager. The academic staff of the Department consists of: 59 Professors, 24 Readers, 63 Senior Lecturers and Lecturers and over 381 contract research staff. There are also 102 academic-related staff (Design Engineers, Administrators, Computer Officers, the Librarian etc.) and 262 technical and administrative support staff. There are over 900 graduate students, most undertaking research for the PhD degree and about 1100 undergraduates studying for the MEng degree.

The Department has six academic Divisions:
Division A: Energy, fluid mechanics and turbomachinery,
Division B: Electrical engineering
Division C: Mechanics, materials and design
Division D: Civil, structural and environmental engineering
Division E: Manufacturing and management
Division F: Information engineering
The new Professor would be expected to join Division B: Electrical Engineering.

The Electrical Engineering Division is composed of six themes:
1. Functional Nano and Layered Materials
2. Multiscale Power and Energy Systems
3. Communications, Pervasive and Intelligent Systems
4. Photonic and Quantum Technologies
5. Smart Electronics and Surfaces
6. Systems and Devices for Health

The Division is currently headed by Professor Andrew Flewitt with 27 members of academic staff (13 Professors, 6 Readers and 8 Lecturers), about 118 postdoctoral researchers and 144 research students. Supporting them are two teaching support staff and four administrators. Staff of the Division includes 1 Fellow of the Royal Society, 4 Fellows of the Royal Academy of Engineering, and 2 Fellows of the IEEE.

Collaborations within and across Divisions are encouraged, which gives the Department great flexibility in responding to new initiatives.

Complementary to the ‘vertical’ Divisional structure, the Engineering Department has identified four ‘horizontal’ strategic themes to draw together its research strengths in individual disciplines to address major challenges:

Four research themes open opportunities for adventurous research and address major challenges:

Energy, Transport and Urban Infrastructure

Creating sustainable integrated solutions for the provision of energy, transport, information, buildings, water and waste treatment in the context of the urban environment.

Manufacturing, Design and Materials

Transforming our engineered world by understanding the whole process from the fundamentals of understanding materials, through design, to manufacturing, and including service and reuse.

Bioengineering

Applying the engineering approach to understanding biological systems and supporting innovation in healthcare, creating new knowledge, solutions for biological and medical applications, and biologically-inspired solutions elsewhere in engineering.

Complex, Resilient and Intelligent Systems

Developing modelling, simulation and analytical methods for understanding large complex systems and ensuring their resilience through new approaches to optimisation, decision-making and control and human-like intelligence.
More information on the Department and its research and teaching can be found at www.eng.cam.ac.uk

3 Standard Duties

Teaching and research

The Professor will be required to deliver lectures and give instruction in electrical and electronic engineering and in particular to perform the following duties:

(i) to lecture, or hold classes, and to give at least 16 lectures or classes annually,

(ii) to undertake original work and the general supervision of research and advanced work in his/her subject and Faculty/Department, and to assist students in their studies by supervision or informal instruction.

Examining

The Professor will be required to undertake such university examining as may be required by the relevant Faculty Board or comparable body.

Supervision

The Professor will be required to act as the supervisor of graduate students as and when requested.

Administration

Administrative duties are shared equitably among the teaching members of the Faculty. The Professors are expected to play significant roles from time to time on the Faculty Board and Faculty Committees dealing with such matters as academic and other appointments, admission of graduate students, research and teaching assessments, the libraries and computing arrangements. They are also encouraged to accept appointment to University Committees.

4 The Colleges

The University, the Faculties and Departments, and the Colleges are linked in a complicated historical relationship that is mutually beneficial but not simple. Students (both graduate and undergraduate) are admitted by one of the 31 Colleges, although in the case of graduate students the Faculties and Departments determine admissions before the Colleges are involved. Almost all undergraduates, and many graduate students, live in a College. The teaching of undergraduate students is shared between the Colleges and the Faculties and Departments, with the Colleges arranging small group teaching (“supervision”) and the Departments providing lecturing, laboratory classes, and advanced supervisions. Most academic staff will also be invited to join a College as a teaching or professorial fellow. College teaching is remunerated separately from the University teaching, and appointment to
a College is a separate matter from a University appointment. Membership of a College adds an important social and intellectual dimension for many of the academic staff. The Chair of the Faculty/Head of Department or senior colleagues can give more advice.

The Scheme for newly-appointed University Officers seeking a College Fellowship is set out at: https://www.ois.cam.ac.uk/uto-scheme/guidance-for-applicants/view

5 Procedure for Appointment

The appointment will be made by a Board of Electors, chaired by the Vice-Chancellor or his Deputy, with a membership which includes members of the Faculty/Department, members of cognate Departments and external experts.

All applications will be acknowledged. The Board of Electors will decide how they wish to proceed towards making an election, which may include interviews and/or presentations. Short-listed candidates may be invited to visit the Faculty / Department to give a seminar on their work and meet prospective colleagues in the course of the process.

Candidates will be informed of the progress of their applications as agreed by the Electors.

It is anticipated that the successful candidate will take up the appointment on 1 November 2019, or as soon as possible thereafter.

6 Enquiries and Applications

Informal enquiries about this Professorship may be directed to Professor Richard Prager, Head of the Department of Engineering, Cambridge, telephone +44 (0)1223 332617 or email rwp@eng.cam.ac.uk.

Further information on the University is available at the following address: www.cam.ac.uk.

Applications, consisting of a letter of application together with a statement of current and future research plans, a curriculum vitae and a publications list, should be made online no later than 28 August 2019.

If you are unable to apply online, please contact the Human Resources, University Offices, The Old Schools, Cambridge, CB2 1TT (email: professorships@admin.cam.ac.uk).
GENERAL INFORMATION

All appointments to University Offices are subject to the Statutes and Ordinances of the University.

A Salary

Salary on appointment will be determined by the Vice-Chancellor at the appropriate point on the University’s salary spine for grade 12, taking account of the criteria for the respective contribution band. Professorial salaries are reviewed periodically, on the basis of research, teaching and general contribution, by the Vice-Chancellor with the assistance of a small Advisory Committee.

There is a normal sabbatical entitlement of one term in seven on full pay, subject to the University regulations.

B Headship of the Department

Should a Professor be appointed to the Headship of a Department, a pensionable payment in addition to salary is made.

C Recruitment Incentive

The University has a scheme whereby a single recruitment incentive payment may be made on appointment at the Vice-Chancellor’s discretion.

D Removal Expenses

If the person appointed is not resident in Cambridge, a contribution from University funds towards expenditure incurred in removal to Cambridge to take up a University office will be made.

E Consultancy Work

The University’s policy on consultancy work is that consultancy arrangements must be entered into privately between the employee and the organisation concerned. The consultancy work must not interfere with the duties required of the officer under the officer’s contract of employment with the University. Consultancy work is not covered by the University’s insurances, even when the University has knowledge that such work is being done. The University must not be regarded as being directly or indirectly involved in any consultancy arrangement through the use of University letterheads, advice given or work done in the individual’s capacity as an employee of the University. Individuals undertaking private or consultancy work are advised to take out personal insurance.

Alternatively, professional indemnity cover may be obtained by channelling private work through the University company Cambridge Enterprise Ltd. Anyone wishing to do so should, in the first instance, contact Cambridge Enterprise at www.enterprise.cam.ac.uk.

F Professorial Fellowships

The great majority of Professors at Cambridge hold a professorial fellowship of a college. Although election to a fellowship is a matter for an individual college, the University takes active steps to draw to the attention of Heads of House the names of those Professors eligible for election. The Scheme for newly-appointed University Officers seeking a College Fellowship is set out at: https://www.ois.cam.ac.uk/uto-scheme/guidance-for-applicants/view
In seeking the views of referees, their permission will be sought for the release of their comments on the successful candidate if it were to be requested by the professorial fellowship electors of a college.

G  **Health screening on appointment to University Office and in the case of University Officers undertaking a change of duties**

Offers of appointment made to prospective University officers whose work will fall within certain categories are conditional on the completion of a medical questionnaire and, if necessary, on a satisfactory health check by the Occupational Health Service.

Only the person elected will be asked to complete the questionnaire at the time of election.

H  **Family friendly policies and benefits**

The University has a range of family friendly policies to aid employee’s work-life balance including maternity, paternity and parental leave, flexible working and career break schemes. In addition, childcare vouchers, access to two nurseries and a holiday play scheme are available through the Childcare Office to help support University employees with childcare responsibilities. Further information can be found at: [http://www.admin.cam.ac.uk/offices/hr/staff/benefits/family.html](http://www.admin.cam.ac.uk/offices/hr/staff/benefits/family.html)

I  **Eligibility to work and reside in the UK**

UK immigration procedures stipulate that an employer may not consider the appointment of any person unless they have seen evidence of their immigration status. Accordingly, shortlisted candidates, whatever their nationality, will be asked to provide such evidence at an appropriate stage in the recruitment procedure.

J  **Equal Opportunities Information**

The University of Cambridge appoints solely on merit. No applicant for an appointment in the University, or member of staff once appointed, will be treated less favourably than another on the grounds of sex (including gender reassignment), marital or parental status, race, ethnic or national origin, colour, disability (including HIV status), sexual orientation, religion, age or socio-economic factors.

K  **Information if you have a Disability**

The University welcomes applications from individuals with disabilities. Our recruitment and selection procedures follow best practice and comply with disability legislation.

The University is committed to ensuring that applicants with disabilities receive fair treatment throughout the recruitment process. Adjustments will be made, wherever reasonable to do so, to enable applicants to compete to the best of their ability and, if successful, to assist them during their employment. We encourage applicants to declare their disabilities in order that any special arrangements, particularly for the selection process, can be accommodated. Applicants or employees can declare a disability at any time.

Applicants wishing to discuss with or inform the University of any special arrangements connected with their disability can, at any point in the recruitment process, contact, Dr Gosia Włosyck, who is responsible for the administration of the recruitment process for this position, by email on mw425@admin.cam.ac.uk