

Design & Modelling Engineer (KTP Associate)

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| Department | Pure and Applied Chemistry (www.strath.ac.uk/chemistry/) in association with RUA Medical Devices Ltd, Irvine (https://rualifesciences.com) a department. | | |
| Faculty | Faculty of Science (www.strath.ac.uk/science/) | | |
| Staff Category | Knowledge Transfer Partnership (KTP) | Reference No | 532233 |
| Reports To | Prof John Liggat, Strathclyde; Dr Sarah Grant RUA | Grade: | RS79 (Off scale) |
| Salary Range: | £30-34K depending on qualifications/experience plus £5,000 training and development budget | Contract Type: | Fixed Term (24 months) |
| FTE | 40 hours/week Mon-Thu 8am-5pm; Fri 8am-2.30pm | Closing Date | 29/06/2023 |

Job Advert

RUA Medical Devices is an experienced full-service medical device contract developer, contract manufacturer and implantable fabric specialist. In April 2020, AorTech International plc acquired RUA Medical Devices Ltd to create a fully formed medical device business. AorTech subsequently rebranded to the RUA Life Sciences Plc and is now the holding company of the group, trading through four businesses (RUA Medical Devices Ltd, RUA Vascular Ltd, RUA Biomaterials Ltd, and RUA Structural Heart Ltd) all of which exploit the group's proprietary Elast-Eon™ polymer technology. RUA Medical Devices Ltd has 32 FTE and generated turnover of over £1 million in 2022/23.

The University of Strathclyde has joined forces with RUA to develop a series of sophisticated new products, and we are seeking a highly motivated KTP Associate to work with us in this exciting new collaboration. The project is part of the Knowledge Transfer Partnership (KTP) programme, funded by UK Research and Innovation through Innovate UK. To find out how KTP works and the vital role you will play if you successfully secure a KTP Associate position please visit: www.ktpws.org.uk.

The KTP Associate will be an employee of the University of Strathclyde and will be supervised by chemistry and engineering academics but will spend most of their working time at the company's HQ, design and manufacturing facility in Irvine on the Clyde Coast. As a Design & Modelling Engineer, you will work alongside a second KTP Associate (a Polymer Engineer) to establish new insights into polymer-processing-property relationships. At the end of the KTP there is the opportunity for a permanent position within the company.

A PhD in Design and Finite Element Modelling or a related discipline is essential, and some industrial experience is desirable. The successful candidate will have a 'hands-on' approach with good interpersonal and team working skills and must be able to communicate at all levels and work to tight deadlines.

The position includes extensive management training a generous personal development budget. With the support of academic experts, the West of Scotland KTP Centre, and mentoring from a KTP Adviser, this is an excellent opportunity which offers an extremely interesting, varied and challenging role.

Job Description

Brief Outline of Job:

Through this Knowledge Transfer Partnership project, you will play a key role in managing and implementing strategic product developments within RUA and transferring knowledge between the University and RUA. the primary challenge you will encounter as a KTP Associate will include the modelling and analysis of heart valve prototypes, to guide and optimise the design process. The Associate will contribute to gaining regulatory approval and commercialisation of a new heart valve platform. The Associate could also be expected to input into process optimisation and Design for Manufacture.

The enabling technology for the new heart valve platform is RUA's ElastEon® polymers, a family of polysiloxane urethanes, which have been demonstrated as one of the most biostable polyurethanes on the market. Traditional polyurethanes are typically susceptible to either hydrolytic and/or oxidative degradation but the novel, contemporary, polyurethane ElastEon® family have been demonstrated as best in class via a copious number of academic and surgical publications. ElastEon® polymers have been used in long term human implants for +15 years and are the enabling technology behind >7 million life sustaining devices.

This KTP programme will expand RUA's knowledge base, which is critical to the development of new and innovative materials, manufacturing processes and product designs.

Main Activities/Responsibilities:

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| 1. | Generation of valve prototypes, and their respective components and sub-assemblies in CAD, including textile composites |
| 2. | Using the appropriate finite element modelling techniques, and data generated from the second Associate, predict prototype stresses and failure modes during heart valve cycling |
| 3. | Investigation of areas of concern using finite element-based techniques |
| 4. | Provide guidance to the valve design process |
| 5. | Scale the lead design to the target size range |
| 6. | Embedding of new knowledge and systems into the company by providing training and support. |
| 7. | Project management and resourcing |
| 8. | Producing milestone reports and presenting work at project review meetings |
| 9. | Completion of KTP Final Report |
| 10. | Involvement in dissemination activities including trade publications, case studies, academic papers and external presentations |

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 A PhD in Design and Finite Element Modelling or a related discipline. Alternatively, a good honours degree (2.1 or better) with equivalent skills gained in industry over a period of years will be acceptable.

Experience

D1 Experience of working in the medical device industry or other manufacturing environment

Job Related Skills and Achievements

D2 Knowledgeable in design for manufacturing

E2 Knowledgeable in the fundamentals of polymer science and mechanical analysis [theory & hands-on experience].

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|-------------------------------|--|
| D3 | Knowledge of polymer physico-chemical characterisation through such techniques as thermal analysis, IR and NMR spectroscopy, and imaging techniques such as optical, electron and atomic force microscopy. |
| E3 | Ability to plan and undertake multi-factorial experiments and data analysis, prepare reports and present results |
| E4 | Ability to organise, plan and use time efficiently |
| E5 | Ability to think creatively |
| E6 | Results focused |
| E7 | Excellent written and verbal communication skills |
| D4 | Understands commercial imperatives |
| D5 | Good understanding of health and safety issues |
| Personal Attributes | |
| E8 | Strong interpersonal skills, friendly and outgoing |
| E9 | Self-starter |
| E10 | Flexible and adaptable |
| D6 | Ability to take an overview |
| E11 | Can engage with colleagues at all function levels |
| E12 | 'Hands-on' approach |
| Other Relevant Factors | |
| D7 | Knowledge of KTP |
| E13 | Willingness to learn |
| E14 | Customer focused |

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Prof John Liggat, Academic Supervisor (j.j.liggat@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Knowledge Exchange staff category can be found at: [Conditions of Employment](#).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Probation

Where applicable, the successful applicant will be required to serve a 6 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

Interviews

Formal interviews for this post will be held in July 2023

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.



Conditions of Employment

KTP Associates

1. GENERAL CONDITIONS

Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, Privy Council.

The University Court recognises the Strathclyde University and Colleges Union (SUCU) as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Research staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with SUCU.

The University operates probationary periods for new staff, the duration of which will be specified in individual letters of appointment. The normal probation period for posts in this staff category is 6 months. Further guidance on probationary procedures is published at <http://www.strath.ac.uk/staff/policies/hr/>.

Further information on the terms and conditions specified in this document and other staffing policies and procedures can also be found at www.strath.ac.uk/hr/.

Further information on the terms and conditions specified in this document is contained in the Staff Handbook, which also includes further details of such conditions as provision for sick/injury leave and pay, leave of absence, holidays and holiday pay, individual grievance procedures, review and disciplinary procedures and collective agreements. Should you not receive a copy of the handbook on appointment a reference copy is accessible by visiting Human Resources.

2. CONTINUOUS SERVICE

In the case of new appointments, unless otherwise stated in the letter of appointment, the date of continuous employment for the purposes of statutory employment rights will be taken to be the date of appointment contained therein. In the case of promotions, regradings or transfers, previous service is continuous.

3. ALLOCATION OF POST

The post to which each member of staff is appointed is allocated to both the University Department and/or other area(s), and the Company Partner named in the member's letter of appointment and any accompanying papers. Should the University Court and/or the Company Partner deem it necessary, in the furtherance of the objectives of the University (specified in its Charter) and/ or the objectives of the Company Partner, they shall, having consulted with the parties concerned and having received the advice of the Senate, re-allocate the post and/or the duties pertaining partially or wholly to it to another University department or area and/or to another Company Partner Department or to an associated Company. Any such re-allocation will be without prejudice to the other conditions of employment of the holder.

If the need arises during the course of employment for members of staff to work outside the U.K. for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

4. RESPONSIBILITY AND SERVICE

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at <http://www.strath.ac.uk/publicinterestdisclosure/>. Other relevant

policies, e.g. Fraud Prevention and Conflicts of Interests can also be found on the University's website.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member's letter and any accompanying papers. Unless otherwise indicated.

5. WORKING TIME

Working time is that required to fulfil the duties of the post and members of staff are expected to comply with the general working pattern of the KTP Company Partner. Further details in relation to working hours will be provided within the offer of employment and/or by the Company Partner on commencement of employment.

6. HOLIDAYS

Entitlement to accrue paid annual holiday will apply from the date of commencement and the accrual rate will be as per the provisions of the KTP Company Partner. Public Holidays will only apply where they are observed by Company Partner and it may be that these have to be taken from the annual leave entitlement where the Company does not apply a separate entitlement in this regard. Where Public Holidays are not observed by the Company Partner, these days may still be taken from the annual holiday entitlement, subject to authorisation. In cases where the Company Partner operates a period of annual closedown, these days may count against the accrued annual holiday entitlement, subject to the normal practices of the Company Partner. Further details and arrangements for requesting leave will be confirmed within the Offer of Employment and/or by the Company Partner on commencement of employment.

7. SICK LEAVE

During any period of absence through illness or injury provided the appropriate medical certificates are received the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

| Period of Continuous Employment at start of absence from work | Full Pay | Half Pay |
|---|----------|----------|
| Less than 1 year | 1 month | 1 month |
| 1 year but less than 2 years | 2 months | 2 months |
| 2 years but less than 3 years | 4 months | 4 months |
| 3 years but less than 5 years | 5 months | 5 months |
| 5 years or more | 6 months | 6 months |

In order to manage the University's sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Health and Social Security. For this and other details see staff handbook.

8. SALARY AND SUPERANNUATION

Salaries are payable monthly by means of a credit transfer to a specified bank account.

If you are under age 75 at the date your appointment commences you will automatically become a member of the pension scheme operated by the University — the Universities Superannuation Scheme (USS). You will be admitted to the career revalued benefits scheme called the USS Retirement Income Builder; the contribution rate that currently applies is 9.8% of pensionable salary. A threshold applies to the maximum salary that counts towards the USS Retirement Income Builder. The current

threshold from 1 April 2023 is £41,004 per year. Contributions based on salary above the monthly equivalent rate of the threshold are paid to the defined contribution section of the scheme called the USS Investment Builder. Please use the following link to access information, including the USS Member Guide: <https://www.uss.co.uk/for-members/youre-a-new-joiner>. The scheme booklet is called 'Your Guide to the Universities Superannuation Scheme'.

The University operates a salary exchange arrangement, Pensions Plus, for members of the USS. Pensions Plus enables pension contributions to be made in a manner so that both employees and the University can benefit from available National Insurance Contribution savings. You will be automatically included in Pensions Plus, provided it does not adversely affect your take-home pay or your ability to claim certain state benefits. If your earnings fall below the Pension Plus pay protection limit you will be opted out of Pension Plus. This will not affect your membership of the USS.

New members of staff may opt out of USS within three months of taking up appointment and will then be treated as if they had never been a member of the scheme. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days' notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section, Finance, in the first instance (pensions@strath.ac.uk). Please note that if you are a member of Pensions Plus and withdraw from USS with less than two years of membership, or cease employment with the University and have less than two years of USS membership, the option of a refund of pension contributions will not be available to you. Instead, USS must provide you with a pension benefit that is payable from your Normal Pension Age. Regardless of whether you participate in Pensions Plus, if you are a member of the pension scheme for two years or more you are not entitled to a refund of pension contributions on leaving the scheme, you will be entitled to a pension benefit.

The University reserves the right to alter or withdraw Pensions Plus as it sees fit or as required to comply with legislative changes. Withdrawal or amendment of Pensions Plus will not affect your membership of USS. If you do not wish to participate in Pensions Plus but wish to remain in the pension scheme please contact the Pensions Team who will provide you with a non-participation form.

Information regarding pension scheme membership can be found on the Pensions pages of the University's website. Full information regarding USS can be found on the USS website – www.uss.co.uk

appointment is for a fixed term it will expire at the end of the period without the necessity for notice. Fixed term contracts may be terminated by either party short of the expiry date by the serving of one months' notice in writing. The University is not obliged to continue a fixed term appointment beyond the employment period.

Revised April 2023

9. PLACE OF RESIDENCE

The University does not normally place specific restrictions upon the place of residence of members of staff. They are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment and with membership of the academic community.

10. PERIOD OF EMPLOYMENT

Members of staff are employed on the conditions indicated in individual letters of appointment and any accompanying papers. The University is not obliged to give notice of termination or continue any employment beyond the end of the fixed term period. Where the period of the contract of employment is for one year or less it may be terminated short of the fixed term period by 1 month's notice on either side. Where the period of the contract of employment is for more than one year, or where there have been a further contract or series of contracts immediately consecutive, the employment may be terminated short of the fixed term period by 3 months' notice on either side, except during the probationary period when the notice period is one month.

11. NOTICE AND TERMINATION

The employment of a member of staff is terminable by at least three months' notice in writing, on either side; except during probationary period when the notice period is one month. If notice is being given by a member of staff earlier release may be granted if this can be arranged without detriment to the work of the department or area. If the