Position Description

College/Division:	ANU College of Science
Faculty/School/Centre:	Research School of Physics
Department/Unit:	
Position Title:	Postdoctoral Fellow
Classification:	Level A
Position No:	
Responsible to:	Head, Department of Materials Physics
Number of positions that report to this role:	
Delegation(s) Assigned:	

PURPOSE STATEMENT:

The ANU College of Science (CoS) comprises: the Research School of Astronomy and Astrophysics, the Research School of Biology, the Research School of Chemistry, the Research School of Earth Science, the Fenner School of Environment and Society, the Mathematical Sciences Institute, the Research School of Physics (RSPhys), and the Centre for the Public Awareness of Science. Staff and students within the ANU College of Science conduct research and delivers a research-led education program that encompasses the entire breadth of the sciences, supported by extensive international networks and by world-class facilities. The College has a strong tradition of research excellence that has fostered distinguished Nobel Laureates and Kyoto Prize winners and that trains scientific leaders in disciplines in which the ANU is consistently ranked in the top twenty in the world.

RSPhys represents Australia's largest university based research and teaching activity in the physics discipline. A team within RSPhys (based around Applied Maths & CTLab) has worked on imaging and image analysis and modelling methods and translation to industry outcomes. The team continues to improve imaging technology including the development of optimal scanning routines, iterative reconstruction methods and new image analysis methodologies. We are currently building larger (metre scale) industrial scanners, driving integration of x-ray data with other imaging modalities for applications in multiple industry sectors and adopting machine learning methods for image processing and process analysis. The unique multiscale M3D technologies now in place at ANU can be extended beyond extraction industries into custom design, engineering of materials and devices for industrially important manufacturing industries. The 2018 award of the Australian Research Council Industrial Transformation Training Centre for Multiscale 3D Imaging, Modelling and Manufacturing (ITTC for M3D Innovation) is accelerating this work. Industry partners within Defence, Automotive/ Materials, Medical Technology, Forestry, Mining and Oil and Gas Industry contribute to the $8M budget of the ITTC.

The Postdoctoral Fellow is expected to undertake work in all three areas of academic activity –research, education and service (including outreach). The allocation of time to each area will be discussed with the position supervisor annually and be reflective of the external funding conditions that support the appointment, the appointees research agenda, school and interdisciplinary teaching requirements and leadership opportunities within the School environment. The Postdoctoral Fellow may also be required to supervise or assist in the supervision of students, and contribute cooperatively to the overall intellectual life of the School, College and University.

POSITION DIMENSION AND RELATIONSHIPS:

The Postdoctoral Fellow will be a member of Research School of Physics (RSPhys), accountable to the Director of M3D Innovation, the Head of the Materials Physics Department, and the Director of the RSPhys. The Postdoctoral Fellow will be expected to work collegially, leading by example to develop and maintain effective, productive and beneficial workplace relationships with all academic and professional School and College staff, students and honorary appointees, as well as with industry stakeholders. This position will also have a mentoring role for students and will engage in collegial and productive collaborations with local, national and where possible, international colleagues.

Role Statement:

In their role as an Academic Level A the Postdoctoral Fellow is expected to:

1. Undertake independent research in the areas of X-ray computed tomography of dynamic systems (i.e., evolving / changing / deforming objects) and mitigation or correction for effects of X-ray scatter with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences, and

collaborate with other researchers at a national level. This includes working as part of a team on an externally funded project subject to deadlines.

2. Collaborate with senior staff to actively seek and secure external funding, assist to prepare and submit research proposals to external funding bodies as appropriate.

3. Develop novel solutions for addressing industry requests and deliver research reports of projects to industry/collaborative partners.

4. Undertake CT technique evaluation and testing on samples for M3D Innovation member company projects.

5. Supervise students working on individual or group projects at honours and graduate-coursework levels. Assist with supervision of research students.

6. Assist to supervise research support staff in your research area.

7. Actively contribute to all aspects of the operation of the School.

8. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public.

9. Establish and maintain relationships with industry, government and the wider research community to enhance cross-disciplinary collaborations and support the translation of research outcomes into applications.

10. An ability and commitment to take part in bids for competitive external funding to support individual and collaborative research activities.

11. Maintain high academic standards in all education, research and administration endeavours.

12. Take responsibility for their own workplace health and safety and not wilfully place at risk the health and safety of another person in the workplace.

13. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

14. Other duties as required that are consistent with the classification of the position.

Skill Base

A Level A academic will work with the support and guidance from more senior academic staff and is expected to develop their expertise in teaching and research with an increasing degree of autonomy. A Level A academic will normally have completed four years of tertiary study or equivalent qualifications and experience and may be required to hold a relevant higher degree.

A Level A academic will normally contribute to teaching at the institution, at a level appropriate to the skills and experience of the staff member, engage in scholarly, research and/or professional activities appropriate to their profession or discipline, and undertake administration primarily relating to their activities at the institution. The contribution to teaching of Level A academics will be primarily at undergraduate and graduate diploma level.

SELECTION CRITERIA:

1. A PhD (or awarding of a PhD within six months of appointment commencement) in Mathematics, Physics, or Computer Science or equivalent qualifications and experience in a related area, with a track record of independent research in the field of X-ray and/or computational imaging (or a related discipline) as evidenced by publications in peer-reviewed journals and conferences.

2. Evidence of experience that is relevant to X-ray tomography research in some or all of the following areas: X-ray imaging, X-ray scatter, Monte Carlo modelling, computational imaging, image processing, optimisation techniques.

3. An ability and commitment to contribute to bids for competitive external funding to support individual and collaborative research activities.

4. Evidence of an ability and willingness to teach at all levels.

5. The ability to assist in the supervision of students working on research projects.

6. The ability to work as part of a team and to meet deadlines.

7. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.

8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.

Delegate Signature:		Date:	
Printed Name:		Position:	

References:

Academic Minimum Standards