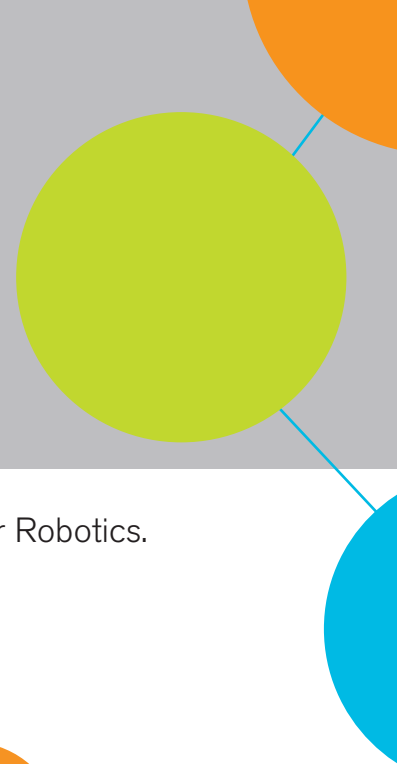


National Centre for Nuclear Robotics



University of Birmingham secures funding for National Centre for Nuclear Robotics.

A consortium of eight universities, led by University of Birmingham, has secured £42 million of new investment to fund the National Centre for Nuclear Robotics (NCNR). NCNR is developing state-of-the-art robotics, sensing and AI technologies to address the major societal challenges posed by nuclear environments and materials.

The £42 million initiative has been co-funded by the Engineering and Physical Sciences Research Council, research institutions, industrial collaborators and investment partners.

Cleaning up the UK's 4.9million tonnes of legacy nuclear waste is the largest and most complex environmental remediation task in the whole of Europe. Much of this work must be done by robots, because the materials are too hazardous for humans, however, many of the necessary robotic solutions have not yet been developed.

In addition to decommissioning legacy nuclear sites, robotic systems are also needed for monitoring, maintenance and Plant Life Extension (PLEX) in the UK's current fleet of operating nuclear power stations. Robots will also be an essential element in the design of new-build reactors. The nuclear industry is increasingly keen to embrace advanced robotics technologies, to make complex operations, in hazardous environments, safer, faster and cheaper.

The National Centre for Nuclear Robotics establishes the UK as an international leader, in transferring state-of-the-art robotics and Artificial Intelligence (AI) research advances into practical solutions for a safety-critical and high-consequence industry. The research has an international outlook, supported by highly cross-disciplinary teams of renowned researchers spanning Europe, USA and Asia.

In addition to research, the NCNR will create opportunities for education and career development of a large new nuclear robotics work-force, with a near-term target to train 65 new nuclear roboticists. Driven directly by the needs of industrial end-users,



NCNR will embed the latest research advances directly into both large corporations and cutting-edge SMEs, spanning both the robotics and nuclear sectors.

The work of the NCNR will also enhance UK capabilities in decommissioning - improving the UK's economic opportunities for technology and consultancy export to a worldwide market valued at ~£1trillion. UK decommissioning is expected to take more than 100 years, with current annual costs exceeding £3 billion. Hence, speeding up decommissioning, by introducing advanced automation methods, will translate into enormous national expenditure savings.

Professor Rustam Stolkin, Director of NCNR and Royal Society Industry fellow for Nuclear Robotics, said: "The University of Birmingham, our academic and industry collaborators, and our international partners are delighted to receive this funding. We very much regard this as a beginning –our ambition is to permanently establish the UK as a world leading centre of excellence for nuclear robotics".

The award is part of the government's £93 million of funding for the robotics and AI in extreme environments programme through the Industrial Strategy Challenge Fund, which was announced in

the Budget of April 2017.

The programme aims to develop robotic solutions to make a safer working environment in industries such as off-shore energy, nuclear energy, space and deep mining, increase productivity and open up new cross disciplinary opportunities, not currently available.

Professor Philip Nelson, EPSRC Chief Executive, said: "These new Robotics Hubs will draw on the country's research talent to nurture new developments in the field of robotics and provide the foundations on which innovative technologies can be built. The resulting outcomes from this research will allow us to explore environments that are too dangerous for humans to enter without risking injury or ill-health. The Industrial Strategy Challenge Fund is helping us achieve a joined up approach to research, discovery and innovation."

Ruth McKernan, Chief Executive of Innovate UK, said: "These pioneering projects driven by the very best minds in UK research and industry exemplify the huge potential of what can be achieved through the Industrial Strategy Challenge Fund and the long-term benefits for the UK economy. These are just the first competitions in robotics and AI, there will be further opportunities for businesses in the coming months."