

## Results of Competition: UKI2S Accelerator Programme for Technology Development Projects: Round 10

Competition Code: 1911\_UKI2S\_R10

Total available funding is £734,245 (taking into account fees and grant committed to date)

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZENTRAXA LIMITED	Engineering Dis-Bondable Adhesives Inspired from Marine Mussel Foot Proteins for Applications as in Advanced Wound and Ostomy Care	£465,432	£232,716

Note: you can see all Innovate UK-funded projects here: <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

Use the Competition Code given above to search for this competition's results

## Project description - provided by applicants

Wound management has been estimated to account for 5% of all health service expenditure in the UK and around 2 million patients suffering acute or chronic wounds each year. Advanced wound dressings are an important product used in wound treatment by providing an ideal healing environment. However, 80-85% of costs come from nursing time and hospital costs with the fact that, on average, a wound dressing needs to be replaced at least 3 times per week. As well as the cost of care, this can place a physical and emotional burden on the patient. Removal of dressings in particular puts the patient at risk of incurring skin damage, a problem particularly affecting old people or young babies who have very delicate skin. We are tackling this problem by developing a new glue, to use in wound care that will increase the time a dressing can be worn and allow for easier, less painful removal when the dressing needs to be changed.

At Zentraxa, the lead applicant in this proposal, we have been developing a new type of biological glue, which is inspired by how shellfish stick to surfaces in the sea. We can increase or decrease the strength of the glue by using enzymes that link together (to increase strength) or break apart (to decrease strength) the glue. In this project we will explore whether our naturally inspired glues can safely be used to stick wound dressings to a range of skin types. We expect that our glues will be used on the edge of a dressing, firmly fixing the dressing in place and forming a watertight seal around the wound preventing infection from entering. When the dressing needs to be removed a spray will be applied that will weaken the glue allowing for the dressing to be peeled off without damaging the skin.

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CROSSFIELD FUSION LTD	Compact fusion reactors for carbon free combined heat and power generation	£396,600	£198,300

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## Project description - provided by applicants

Crossfield Fusion Ltd is developing a novel compact fusion reactor targeting carbon free heat and power generation.

Our vision is to manufacture compact fusion reactors the size of a small shipping containers that can be mass produced in factories. The company's fusion reactor technology is expected to scale up to about 1MWe of electrical output or 2-3MWt of heat. Thus, it is dramatically different in size and output to Tokomak Fusion reactors which promise to deliver 100's-1000's of MWs thus entirely complementary in application. They are also complementary to the small modular reactor program (SMR and AMR) and nuclear power in general as these are again higher output reactors and are physically much larger than those projected by the company.

This is an exciting prospect for the future and when developed will positively impact climate change via carbon free district heating and power, carbon free electric vehicle charging and carbon free marine power plants.

Prior to achieving these end goals the company will be exploiting the technology commercially as high output compact neutron sources for use in radiotherapy, medical isotope production and material testing applications.

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