



## **FMC TECHNOLOGIES** CASE STUDY: PIONEERING R&D WITHIN THE SUBSEA OIL AND GAS INDUSTRY

**NEW TECHNOLOGY IS CURRENTLY BEING DEVELOPED AT GLASGOW CALEDONIAN UNIVERSITY AS PART OF A MULTI-MILLION POUND INTERNATIONAL COLLABORATION TO ENABLE SAFER AND MORE EFFICIENT OIL RECOVERY FROM DEEPER WATER AND HARSHER ENVIRONMENTS THAN EVER BEFORE.**

Limitations in current technologies often mean that conventional oil recovery processes leave around two-thirds of the oil in the reservoir, yet recent developments, including increased oil recovery (IOR) systems, could make the safe extraction of this additional oil both economically and technically feasible.

With opportunities such as this in mind, global oil and gas solutions provider FMC Technologies is working with the university to deliver a pioneering five-year research and development collaboration within the subsea oil and gas industry.

FMC Technologies is a leading global provider of technology solutions for the energy industry with over 16,000 employees and production facilities internationally. FMC Technologies designs, manufactures and services technologically sophisticated systems and products such as subsea production and processing systems, surface wellhead systems, high pressure fluid control equipment, measurement solutions, and marine loading systems for the oil and gas industry.

The collaboration combines expertise in electronics, optoelectronics, electrical power and instrumentation at GCU with that of subsea engineering and optoelectronics within FMC to deliver a portfolio of research and development projects to identify new opportunities for safe and efficient oil recovery and to enhance reliability and integrity in the monitoring of subsea installations.



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## ENERGY

It will also produce innovative new products and technologies for subsea hydrocarbon production applications. All aspects of the production process will be covered, including subsea equipment, subsea processing, equipment monitoring and oil recovery technologies and will identify and develop new technologies to be installed in new and existing equipment across the globe.

GCU formally launched its FMC Technologies Subsea Optoelectronics laboratory on campus with a series of lectures by a leading expert on solutions for the oil and gas industry. Specialist consultant to FMC Technologies Dr Danny McStay discussed the application of optoelectronics related to the subsea oil and gas industry in presentations to students and business delegates entitled 'Heritage to Hydrocarbons: The Role of Applied Optoelectronics'.

The growing global demand for oil and gas is driving producers to increase the overall efficiency of the production process and to

operate in more extreme conditions with minimal environmental impact. Optoelectronic technologies are seen as one of the key technologies in enabling the industry to meet these challenges.

The FMC Technologies lab at GCU has been established for developing FMC research projects and will be used by students, researchers, FMC Technologies engineers and GCU academics.

The partnership also spans industrially funded PhD studentships and two Knowledge Transfer Partnership (KTP) projects with GCU.

Professor Brian Stewart, who is leading the collaboration from GCU, says: "GCU prides itself in its track record of partnering with industry to develop applied technology solutions, and it is with excitement that both FMC Technologies and GCU look forward to the impact and benefits that new technology solutions will have for the oil and gas industry."

"One of the emerging technological innovations is the development of intelligent optoelectronic sensors to provide more detailed and accurate technical information on the state of the equipment used to pipe oil from the subsea reserves to land delivery points which may be hundreds of miles away. This will help achieve total asset awareness and maximise performance by allowing the asset to operate at optimal efficiency, cost and safety with minimal environmental impact."

FMC Technologies is currently expanding its Scottish operations in Bellshill and Dunfermline and creating new jobs, thanks to £2.5 million of Regional Selective Assistance through Scottish Enterprise.

**"GCU PRIDES ITSELF IN ITS TRACK RECORD OF PARTNERING WITH INDUSTRY TO DEVELOP APPLIED TECHNOLOGY SOLUTIONS."**

**At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real-world innovation. GCU's strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.**

**Contact us to find out more about building a brighter future with GCU at [www.gcu.ac.uk/business](http://www.gcu.ac.uk/business).**



### FURTHER INFORMATION:

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