HARNESSING TALENT PLATFORM

A new boost for EU Regions

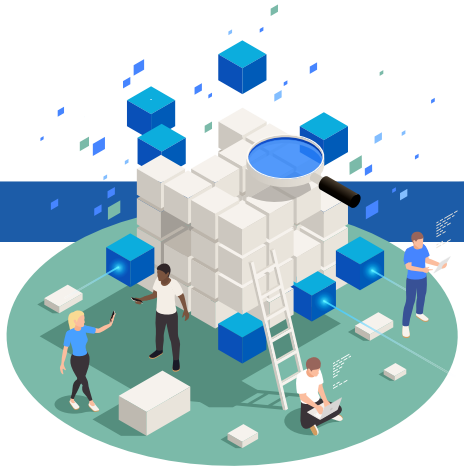
*Good practice*

# I-Form: The Research Ireland Centre for Advanced Manufacturing

**Working Group:** Research & Innovation (R&I)

**Member State:** Ireland

**Thematic area:** Competitiveness and Innovation



## Basic project details

**Lead organisation:**

University College Dublin - Ireland

**Partner organisations:**

- Dublin City University
- South East Technological University
- National University of Ireland Galway
- Maynooth University
- Trinity College Dublin
- National Institute for Bioprocessing Research and Training
- Atlantic Technological University
- University of Limerick, Institute of Technology Sligo
- Waterford Institute of Technology

**Project duration:** 2017 – Ongoing

## Overview and objectives

I-Form aims to shape the future of manufacturing through high-impact research into the application of digital technologies to materials processing. The centre has a particular focus on Additive Manufacturing (3D printing) and collaborates with industry to design new products and manufacture high-value components with enhanced material performance, reduced processing times, and improved process reliability. The main goals of the project are: to deliver scientific excellence in additive manufacturing research; improve the competitiveness of Irish manufacturing through research partnerships; provide a talent pipeline of PhD and postdoc graduates with engineering and Artificial Intelligence (AI) skills; increase the international profile of Irish manufacturing research, and improve the perception of manufacturing careers in education systems with a particular focus on developing a diverse and inclusive long-term talent pipeline.

This Good practice is one of the 31 Good practices included in the *Good Practices Catalogue (Volume 1)* developed by the Talent Booster Mechanism Working Groups. *The Catalogue* is available here: https://ec.europa.eu/regional_policy/sources/communication/harnessing-talents/Good_Practices_Catalogue_Volume_1.pdf

## Context

The project addresses the need for advanced manufacturing capabilities and the integration of digital technologies to enhance process efficiency and competitiveness. The programme also addresses the need for an increased supply of PhD level graduates that are required to embed Research and Development (R&D) capabilities in manufacturing companies. The problem of under-representation of females in manufacturing, as a career is also tackled through schools and mentorship projects.

## Target groups

PhD and postdoc graduates, industry professionals, and students at various educational levels.

## Actions

The project's actions included core research in experimentation, modelling, and AI applications for additive manufacturing; collaborative research projects with industry; Computer-Aided Design (CAD) and three-dimensional (3D) printing training and competitions for students; teacher training in 3D printing; postgraduate training in data analytics and AI; and upskilling and reskilling programs.

## Financial allocation

**Total budget:** EUR 33 500 000

**EU co-funding:** Yes

**Sources of funding:**

- Research Ireland
- European Regional Development Fund (ERDF 2014-2020 and 2021-2027)

## Working Group Insights

"In agreement with the other members of the R&I WG, I selected this good practice because of its significant impact on place-based Research & Innovation. It engages all education levels across the country in Science, Technology, Engineering, and Mathematics (STEM) and additive manufacturing, while actively involving the private sector. By securing co-funding from companies, it bridges education and industry through technology transfer, provides PhDs to industry, and strengthens Ireland's industrial research footprint. This multilevel approach fosters innovation, collaboration, and long-term growth in both education and the private sector.

By supporting collaborative research projects and connecting research with industry, the project contributed to the engagement of over 12 200 primary and secondary school students and training of over 130 PhD and postdoc graduates to date, contributing to talent retention and development in the manufacturing sector. The industry partner motivation for engaging with the Centre on research projects is strongly linked to the post graduate talent pipeline, which possesses a combination digital, materials and engineering expertise".

**PAOLA FANTINI**
Education and Innovation expert at the University of Naples Federico II

## Results

The project not only involves and impacts on all education levels in the whole country on STEM and additive manufacturing but also it impacts the private sector. It manages to acquire co-funding from companies and generates multilevel results in research, tech-transfer, talent development and new investments. Under this project, 130 PhD/Post Doc researchers have been trained among which 55% moved to industry as first destination. 19 Commercialisation projects and 10 technology licenses to industry have been generated along with 3 start-ups. 467 journal publications with Field-Weighted Citation Impact (FWCI) of 1.95 - demonstrating scientific excellence in advanced manufacturing research have been generated. Last but not the least, schools manufacturing programs reached 600 teachers, 12 000 pupils across 5 countries, supported by EIT Manufacturing (EIT-M), which is one of the Knowledge and Innovation Communities (KICs) under the European Institute of Innovation and Technology (EIT).

## Success factors

- Strong industry collaboration, creating partnerships for emerging research and innovation in the STEM fields to facilitate the knowledge transfer from research to businesses;
- Comprehensive training programs, equipping the individuals in the targeted sectors with the needed skills to push forward innovation and knowledge valorisation;
- Focus on cutting-edge research in digital technologies and materials processing.

## Implementation challenges

- Skills mismatch addressing advanced manufacturing needs particularly within Small and Medium Enterprises (SMEs) which constitute 40% of I-Form partner companies;
- Lack of integration between skills strategies and industry strategies: surveying of industry partners indicated a requirement for bespoke solutions for upskilling and reskilling whereas generic training modules were mostly available.

## The conclusion of Paola Fantini, Education and Innovation expert at the University of Naples Federico II

“Bridging research and industry is key. This initiative shows how strong partnerships and talent development can drive manufacturing innovation and competitiveness in a territory”.

## Useful sources

**Official website:** www.i-form.ie

https://www.linkedin.com/company/i-form-advanced-manufacturing/

https://x.com/I_Form_Centre

I-Form - www.pemcentre.ie

## Contact

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