

## Vinnovate Call 2025 – Brief Overview Project Ideas Expressed (June 2025)

- The present document provides a **brief description** of the project ideas presented during the various webinars organised and/or described on the [Gateway](#).
- The aim of the present document is to **maximize outreach and matchmaking opportunities**, offering interested organisations a single document where project ideas are described.
- If you have an interest in teaming up with one of the organisations listed below, **please contact them directly** (please contact Vinnovate [yinnovate@s3vanguardinitiative.eu](mailto:yinnovate@s3vanguardinitiative.eu) should you face issues entering in contact with the organisations).

Name Organisation (type)	Region	Project idea description	Complementary expertise (partnering requests)	Contact details
Faculty of Engineering of the University of Porto (Academic)	Norte	Microalgae for Circular Bioeconomy Solutions - This project aims to develop an integrated microalgal bioprocess for CO <sub>2</sub> capture, wastewater treatment, and biomass valorisation. By cultivating microalgae using CO <sub>2</sub> -rich industrial gas streams and nutrient-laden wastewaters (e.g., municipal, agro-industrial, and food industry effluents), we will simultaneously reduce environmental burdens and produce high-value biomass. The harvested biomass will be evaluated for conversion into biofuels and other bio-based products, promoting a circular and low-carbon bioeconomy.	Industrial partners; R&D units with photobioreactors at pilot scale.	<a href="mailto:jcpires@fe.up.pt">jcpires@fe.up.pt</a>
Brainport Development	Noord Brabant	<b>Digital tools to boost productivity in 3D printing</b> <ul style="list-style-type: none"> <li>• <u>Generative Design Tools</u> AI-driven part optimization and consolidation for AM</li> <li>And/or</li> <li>• <u>Smart In-Process QC</u> Real-time defect detection in metal and polymer printing.</li> <li>And/or</li> </ul>	<ul style="list-style-type: none"> <li>• 3DP users with openness to experiment with digital technologies in their manufacturing workflows</li> <li>• Providers of complimentary technologies and/or services to 3DP (post-processing, recycling, design, QC, material development, etc.) that</li> </ul>	Samuel Tonneslan ( <a href="mailto:s.tonneslan@brainportdevelopment.nl">s.tonneslan@brainportdevelopment.nl</a> )

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		<ul style="list-style-type: none"> <li><u>Predictive Maintenance</u> Sensor-based monitoring of key AM components.</li> </ul> And/or <ul style="list-style-type: none"> <li><u>Digital Twin Simulation</u> Virtual optimization of orientation, supports, and thermal behaviour.</li> </ul> And/or <ul style="list-style-type: none"> <li><u>Automated Post-Processing</u> Robotic finishing systems for small-batch AM.</li> </ul> <u>Energy-Efficient</u> <u>Printing</u> AI to optimize print jobs for energy and material use.	are similarly open to experimentation with these technologies Automation + AI solutions providers, preferably with experience in applications with manufacturing technology and hardware	
Techinnova S.p.A. (SME, certified incubator, private R&D and tech transfer center)	Lombardy (Italy)	<b>H2E – Hydrogen To Everyone:</b> Development of a modular, scalable, and eco-friendly hydrogen production and integration system (from ammonia/livestock waste) targeting the decarbonisation of diesel-based sectors such as agriculture and fishing.	Partners in hydrogen systems engineering and industrialisation; energy-intensive industries and mobility sectors; EU pilot sites and go-to-market experts.	Edoardo Viganò – <a href="mailto:comunicazione@techinnova.eu">comunicazione@techinnova.eu</a> – <a href="http://www.h2e-project.eu">www.h2e-project.eu</a>
TEC Eurolab (SME) / Bangor University	Emilia Romagna / Wales	Development of bio-based composite components	End users (Field to be defined on a case-by-case basis)	<a href="mailto:longo@tec-eurolab.com">longo@tec-eurolab.com</a> / <a href="mailto:adam.charlton@bangor.ac.uk">adam.charlton@bangor.ac.uk</a>
In2AI (SME)	Galicia	Information Protection for AI-powered Conversational Agents	<ul style="list-style-type: none"> <li>Ability to implement proposed system in a real and challenging scenario</li> <li>Interested in realizing the benefits associated with project implementation in their organization</li> </ul>	Rafael San Miguel Carrasco <a href="mailto:rafael.sanmiguel@in2ai.com">rafael.sanmiguel@in2ai.com</a>

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			- Owning domain-expertise to help with the training process required for the agent to learn roles and topics	
Minesto Ltd. (SME)	Wales	<p>Demonstrate and validate a small-scale tidal kite system in shallow water conditions at the Marine Energy Test Area (META), Wales, with a focus on durability, modularity, and advanced manufacturing for future offshore deployment.</p> <ul style="list-style-type: none"> <li>- <b>Advanced Manufacturing:</b> Evaluate novel kite components (blades, tether, fairings) produced via EU-based additive or composite manufacturing.</li> <li>- <b>Harsh Environment Suitability:</b> Test structural durability, sensor performance, and corrosion resistance in shallow tidal conditions.</li> <li>- <b>Smart Monitoring:</b> Integrate and test real-time sensor systems (load, fatigue, corrosion) with digital twin capability.</li> <li>- <b>Modularity:</b> Assess assembly and maintenance processes of modular subcomponents for easier offshore scalability.</li> <li>- <b>Cross-sector linkage:</b> Provides testbed data for green hydrogen production and integration in future offshore hubs.</li> </ul>	Expert in composite hulls, electrical (marine) drivelines, sensing, cables and connectors Link the demo to local grid/hydrogen feasibility studies	<a href="mailto:Johannes.huffmeier@minesto.com">Johannes.huffmeier@minesto.com</a> ; <a href="mailto:louise.marsden@minesto.com">louise.marsden@minesto.com</a>
Romagna Tech (Research Centre)	Emilia Romagna	We offer a service of Digital Transformation for Industry 4.0 in manufacturing, ready to be applied to partner SMEs.	Partner SME(s) willing to investigate service of Digital Transformation for Industry 4.0 in manufacturing	On the <a href="#">Gateway</a>
Romagna Tech - Research Institution.	Emilia-Romagna, Italy	Building on a solution (TRL 7-8) developed in its research labs, an interoperable system for real-time monitoring of plants or production lines, Romagna Tech intends to carry out a <b>pilot test on a production line in a manufacturing company</b> . The pilot will validate the <b>cloud-connected sensors and a dedicated software platform</b> to monitor <b>machine efficiency</b> , collect <b>operational data</b> ,	A manufacturing company (preferably a SME) , producing machines for industry.	<a href="mailto:valeria.rossi@romagnatech.eu">valeria.rossi@romagnatech.eu</a> ; <a href="mailto:matteo.campana@romagnatech.eu">matteo.campana@romagnatech.eu</a>

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		detect <b>anomalies</b> , and enable <b>predictive maintenance</b> . The system also provides insights into how the machines are used by end customers, with the goal of improving performance, reliability, and service support.		
ASTUTE, (Swansea University)	Wales	Various projects possible. At ASTUTE, we partner with manufacturing businesses to solve complex engineering challenges and accelerate innovation through: <ul style="list-style-type: none"> <li>◇ Advanced Materials Technology</li> <li>◇ Computational Engineering Modelling</li> <li>◇ Manufacturing Systems Engineering</li> </ul>	Industry leader aiming to enhance productivity, sustainability, or wellbeing through cutting-edge technology	Please reach out to us to discuss your challenge: <a href="mailto:astute@swansea.ac.uk">astute@swansea.ac.uk</a> ; <a href="mailto:f.belblidia@swansea.ac.uk">f.belblidia@swansea.ac.uk</a>
High Value Manufacturing (HVM) Group-Cardiff University	Wales	Various projects possible. We conduct world class research that has valuable impacts and applications in manufacturing industry. The HVM group conducts research across a range of areas including: <ul style="list-style-type: none"> <li>- Additive Manufacturing</li> <li>- Design and Manufacturing</li> <li>- Micro/Nano Manufacturing</li> <li>- Circular Hybrid Manufacturing</li> <li>- Sustainable Manufacturing</li> <li>- Smart Systems</li> </ul> More information <a href="#">here</a> .	Open to collaboration in areas mentioned on the left.	On the <a href="#">Gateway</a>
BI-REX: BigData Innovation& Research Excellence	Emilia-Romagna	Various projects possible. BI-REX can provide high-level expertise and infrastructure to support Vanguard Initiative projects within the High-Performance 3D Printing (3DP) pillar. BI-REX offers access to a cutting-edge pilot line equipped with industrial additive manufacturing systems (metal powder bed fusion, FDM, hybrid CNC/AM setups), enabling rapid	Open to collaboration, see description on the left.	On the <a href="#">Gateway</a> .

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		prototyping, design validation, and integration of smart components.		
AquaValor (Lab/Centre)	Norte	AquaValor, as a Collaborative Laboratory (CoLAB) based in Chaves, Portugal, specializes in the valorization and technological transfer of water-related resources. Its expertise spans various sectors, including health, food and beverages, cosmetics, and digital technologies. AquaValor's involvement in projects like Aquae Vitae (Fundación La Caixa) and AQUAPRED (Interreg SUDOE), and its focus on transferring knowledge and technology to interior regions demonstrate its capability to engage in interregional collaborations.	AquaValor is open to participate in a consortium for the Vanguard Initiative as a partner. It is available to offer its full expertise and multidisciplinary team. AquaValor carries a large set of associates which can be an important asset to the development of potential pilots and to ensure the participation of private companies, largely SMEs.	On the <a href="#">Gateway</a>