

PPD TEAM

Product Process Design

Taking into account the life cycle of a product or system from the design phase

New digital opportunities ("internet of things", "cloud computing", "big data", etc.), the development of the circular economy, the reorganization of production means, recycling and re-production, and the growing demand for sustainable development are inevitably transforming products and production systems and questioning the way future products and systems should be designed. With an approach based on integrating design and manufacturing in order to boost environmental performance, the CPP team develops models and offers design methods and organizations in line with emerging technologies leading to new forms of consumption and production.



Research Topics

Design and environmental performance

- Recycling of rare materials: potential environmental impacts and benefits
- Design of products, processes, organizations and their life cycle (life cycle engineering)
- Development of environmental data management in relation to product data.

Design/Manufacturing Integration:

- Representation of manufacturing process knowledge including innovative manufacturing (additive manufacturing)
- Integration of manufacturing process efficiency in product design (energy and environment)
- Industrial management of innovation and tools for disseminating knowledge

Scientific Challenges

- Coordination of design under resource constraints for manufacturing (rare materials) and environmental impacts
- Understanding of sustainable consumption and production
- Eco-design methods and support tools
- Model-driven design of manufacturing processes in additive manufacturing

Partnerships

- Steering of research groups (EMIRacle, ARC 8 TSOs) and participation in the CIRP, Design Society, ECOSD, AIP-PRIMECA, Manufacturing 21
- Collaboration with foreign universities: università Politecnica delle Marche, Universidade Federal Do Parana Tecnologica, University of Bath, IWF KMUT Bangkok, Universidad de Valladolid
- Industrial collaboration: Orange, Dassault System, Renault, Neopost, Rowenta, ZF, Zodiac Aerospace, Poly-Shape, Sollium, Faber, Carrier, Cetim CTDEC, CEA

