NACE CODE C14, C32

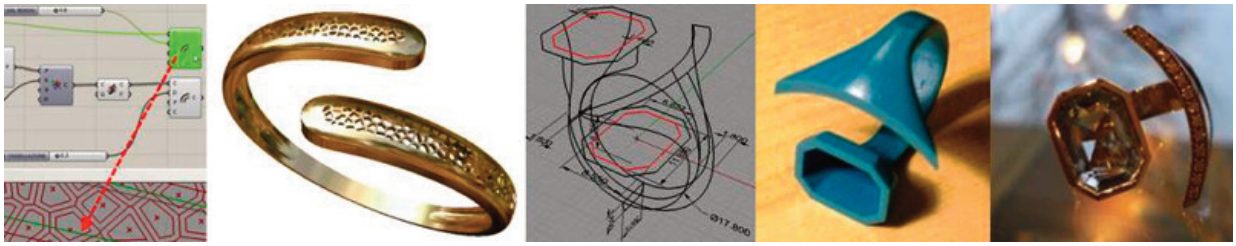
CAD/CAM TECHNOLOGIES: 3D PRINTING, CAD MODELLING AND REVERSE ENGINEERING IN GOLDSMITH'S CRAFT AND JEWELLERY

Innovations and benefits - The ENEA Protolab Laboratory provides support to SMEs in the Made-in-Italy sector (goldsmith's art, jewellery and fashion accessories) to assess the efficient use of new generation CAD/CAM technologies, 3D printing, CAD modelling and reverse engineering during the product development and production optimization phases. In such a framework, the CAD/CAM technologies Protolab Laboratory deals with allow to:

- reduce the time to market of collections
- favour "mass customization" from an industrial perspective to better meet the market needs
- develop high-design 3D models using advanced generative modelling technologies
- reduce production costs and increase the quality of products
- encourage the shift of production towards higher-value-added collections.

Uses - 3D CAD design, rapid prototyping and reverse engineering to realize high-design collections. Creation of physical, thermoplastic prototypes starting from the 3D file for the lost wax casting phase. 3D scanner imaging of real models to create the related virtual high-resolution prototype to be channeled into the product development cycle.
Development of CAD software for customized applications through generative modelling.

Past and present activities - Participation in European (CEM – Computational Evolving Manifolds and MADE 3D under Horizon 2020) and national research projects, including projects such as INDES – Innovazione per l'industrial design, MAKE3D Modellazione 3D e Fabbricazione Digitale per le PMI, and HOREMHEB, a project of virtual engineering and reproduction of artifacts from the Egyptian necropolis of Saqqara, developed with the Archaeological Museum of Bologna. Training activities in collaboration with trade associations and development of "best practices" calibrated according to the business needs.
Collaboration underway with the ENEA Laboratory of Industrial Research CROSS-TEC (Interoperability and process virtualization for enterprise networks) – Accredited at the High Technology Network of Emilia-Romagna Region.



CUSTOM Thanks to its flexibility, the support service to CAD/CAM technologies users can be adjusted to different needs and contexts

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