Short curriculum of Technores Srl

Technores s.r.l. is a consulting firm operating in engineering and advanced research since 2002. It has specialized in the design of non-standard, innovative products, processes and entire productive plants. In particular, Technores staff helps its customers and/or industrial partners:

- define innovative project ideas for new processes and/or products;
- study the criticalities related to the new processes/products;
- carry out all development activities necessary to industrialize new products and processes;
- design and optimize industrial production systems.

Moreover, Technores carries out research activities on behalf of third parties and it offers technical, financial and management support to customers who carry out research and development activities either by means of their own funds or by means of public funding.

So far, Technores has taken part as subcontractor in over 100 research and development projects co-financed by regional, national and European public institutions. It has been Prime Investigator of the project NANO/RSS (Call for tender: Regione Toscana 2006) and is a partner in the project "Development of an innovative system for the rapid virtual-real prototyping from the yarn to the finished garment (acronym: DIGIYARN)" co-financed by Regione Toscana basing on following European funds: POR FESR 2014 – 2020- Call number 2: Research and Development Projects of MSMEs, Executive Decree n. 7165 of 24th May 2017.

Technores owns several patents in the different industrial activity areas and is co-owner of various patents with some of its industrial partners.

The following tables show some of the process/product prototypes designed by Technores and some of the processes/products realized.

Some examples of innovative process/product prototypes designed and realized

Year	Description
2018-2019	Design and realization of an innovative process for producing different kinds of innovative catalytic supports (honeycomb etc.) and using different materials by means of advanced 3D printing systems.
2018-2019	Design, realization and experimentation of the prototype of a portable breathing system aiming at reducing the airborne contaminants deriving from a homecare patient and/or at reducing the contaminants inhaled by an operator working in critical environments.
2018-2019	Design, realization and experimentation of the protype of an electronical system for the dyeing of yarn with design effects by means of advanced piezoelectric nozzles.

2018-2019	Design and realization of an innovative prototypal system for the 3D printing of cylinders used in textile industrial processes for printing, chamfering and calendaring.
2015-2018	Design, realization and experimentation of the prototype of a mobile system to wash, dry, cryonize and cryogenically micronize algae in order to subsequently extract active substances.
2014-2015	Design, realization, experimentation and industrialization of a yarn production system using the “pairfect” method for the production of identical balls of yarn with controlled chromatic effects
2015-2016	Design, realization and experimentation of the prototype of a system for the post-dyeing drying of yarn.
2013-2014	Design, realization and experimentation of a testing reactor for flat ceramic membranes nanofunctionalized for the permeation of oxygen coming from air and of hydrogen coming from Syngas at a maximum temperature of 1000°C and a pressure jump of 10 Bar.
2012-2013	Design and realization of the prototype of an anti-NBC air-filtration system based on a kinetics of abatement of pollutant gases (SARIN) in air flows by means of nanofunctionalized surfaces with nanometric titanium dioxide activated through UV sources for military application (tank: Carro Armato Ariete).
2011-2012	Implementation of a kinetics of abatement of NOx in air flows by means of nanofunctionalized surfaces with nanometric titanium dioxide activated through UV lamps. Realization of the prototype of a photocatalytic filter based on the above mentioned kinetics able to treat 1.500cm/h of air. Optimization of the alpha and beta version of the above mentioned prototype and final industrialization.
2011-2012	Implementation of a kinetics of abatement of bacterial loads in air flows by means of nanofunctionalized surfaces with nanometric titanium dioxide activated through UV lamps. Realization of the prototype of a photocatalytic filter based on the above mentioned kinetics able to treat 350cm/h of air. Optimization of the alpha and beta version of the above mentioned prototype.
2009-2011	Implementation of a process able to modify the surface of fabrics by means of the interaction with controlled jets of CO2 micro-crystals physically or chemically pressurized. Realization of the process prototype and of the related industrial system.
2009-2012	Study of a fluid dynamic system in depression for the generation of a controlled atmosphere in which a suspension of nanoparticle solutions or of pigments can be applied to a yarn in continuous movement and then stabilized by means of thermal processes. Realization of the pilot prototype and experimentation.
2009-2011	Design and experimentation of a prototypal system for the storage of hydrogen and of the related control-module to supply a fuel cell installed on a hybrid bus.
2006-2010	Design, development and experimentation of an innovative system to analyse and experiment in small-scale and in real scale torches to burn tail gases derived from petrochemicals.
2005-2010	Design, development and experimentation of a microwave open cavity reactor for the study of innovative sintering processes and of innovative chemical synthesis processes for the production of nanoparticle solutions of inorganic oxides.
2006-2007	Study and development of the prototype of a system able to apply nanoparticle solutions on glass.
2004-2007	Study, development, design and experimentation of processes able to apply nanoparticle solutions on simple and compound textile supports for various industrial

	applications. Industrialization of the whole process up to the treatment of industrial series of fabrics with different fibres.

Some examples of the plants, facilities and processes we have designed and realized

Year	Work
2017-2019	Preliminary, final and executive design of the layout and the management logic of a complete plant for the testing of gas bottles by means of a completely automatized production line integrated with optical scanning systems, Rfid tags, buffer store etc. - This work has been realized and it has just entered its final testing stage -
2016-2019	Preliminary, final and executive design of auxiliary facilities and of air-conditioning systems for the new plants of a cosmetic company - In progress -
2015-2016	Preliminary design and realisation of a GMP pharmaceutical cell factory in 2.200 m^2 for the production of injectable medicinal products including: provision of the documentation and invitation to tender, support during the procurement and realization stages, submission for the AIFA prior opinion, testing and obtaining AIFA authorization. - This work has been realized, tested and authorized by AIFA -
2014-2013	Preliminary, final and executive design of new analysis laboratories and research and development strategies provided with advanced microbiology. For cosmetics - This work has been realized and tested -
2013	Preliminary, final and executive design as well as support during the realization stage and the testing of the extension of advanced research and development laboratories. - This work has been realized -
2009-2008	Feasibility study of the third line of a plant for the selection of multi-material and provision of the documentation necessary for the subsequent invitation to submit a tender related to the realization of the above mentioned plant. - This work has not been realized -
2009- 2007	Preliminary, final and executive design, support during the realization and the testing stages of new laboratories of advanced research and nanomedicine with white Class C cleanroom - This work has been realized -
2008	Feasibility study for the realization of 22 apartments (energy class A) in Incisa Valdarno (in the Province of Florence, Italy)
2008	Preliminary, final and executive design of various photovoltaic installations from 22.8 kW to 500 kw - Realized -
2007	Feasibility study (both technical and financial) for the realization of a cogeneration and district heating plant
2007	Feasibility study (both technical and financial) for the realization of a cogeneration plant
2007	Preliminary, final and executive design including final assessment and testing of Research & Development laboratories - Realized -

Year	Work
2006-2005	Preliminary, final and executive design including final assessment and testing of aerial security systems for 6 production lines - **Realized** -
2006-2005	Preliminary, final and executive design including final assessment and testing of new environmental testing laboratories - **Realized** -

Further activities and special services

Technores staff over the years has developed relevant know-how in specific services for its customers. Although these services do not play a significative role in our turnover and resources, they still represent sectors in which Technores stands out in the market for the application of the same technological and quality standards applied in the field of engineering and advanced research.

Among these activities, the main ones are:

- Airborne surveys. Technores is an ENAC operator (nr. 14810/37863) for unmanned aerial vehicles (SAPR DRONES) for special operations (both critical and non-critical) and is able to offer these services to its customers using its own SAPRs (multicopter: DJI Phantom 4, DJI Mavic 2 PRO);
- Support in providing the necessary documentation to participate in public and private invitations to tenders;
- Technical reports and legal advice concerning technical aspects in legal actions (both court- and party-appointed).
- Consulting and support for the development and the implementation of advanced management systems, including quality certification in compliance with the current reference standards and rules;
- Consulting in the field of workers' health and safety (Technores can also work as external actor in charge of the workers' health and safety);
- Development of management software, web sites and web apps, including hosting in Technores servers which are managed and secured according to the most advanced standards currently available;
- Plant design, from the feasibility study up to preliminary, final and executive design and final testing;
- Development of management software for the optimization of company production;
- Development of specific design APPs and CAD, for example CAD for yarn printing;
- Commissioning and supply management and/or monitoring of the suppliers;
- Research into special technologies for specific applications.