

Special session**Deadline: 15 May 2020****Title:***Human in the Factory of the Future***Organised by (names, affiliations and emails)***BENCHEKROUN Tahar-Hakim , CRD - CNAM Paris, tahar-hakim.benchekroun@lecnam.net**DAILLE-LEFEVRE Bruno, CPI / INRS Vandoeuvre, bruno.daille-lefevre@inrs.fr**HOUSSIN Rémy, CSIP-ICube Université de Strasbourg, remy.houssin@insa-strasbourg.fr**MARTIN Patrick, LCFC / ENSAM campus de Metz, patrick.martin@ensam.eu***Abstract:**

Human and well-being in the factory is one of the main key point that has been underlined by several reports at national and international level dedicated to the paradigm of Factory of the Future. Factors as uncertainty of the demand in terms production rate, product customization, variability in manufacturing processes and times, reconfiguration, space organization, scheduling introduce new ways for designing and controlling working situation. New technologies are implemented in all product lifecycle phases (design, industrialisation, production, use and recycling phase) : virtual/augmented reality, robots, sensors,... Following the production needs, the worker, the robot or both in collaboration perform several tasks. The workers are placed in the centre of the Factory of the Future but this concept introduce hazardous events, problems of health and safety (physical or cognitive tasks, fatigue, stress, space and time organization, human-robot interfaces) which have to be take into account in the different working situations and task undertaken. This leads to numerous questions about the health and safety of employees. How to specify, and then design safe production cells for different phases of life cycle? How to protect workers in constantly changing environment? What is the impact of collaborative robots and new human-machine interfaces on production activities? How to ensure simultaneous responses to performance (productivity, flexibility, quality) and health-safety objective?

All these questions require acquisition and structuring of new knowledge from an engineering point of view (specification and design methods, simulation tools, risk analysis, definition of preventive measures) as well as human factors in order to integrate flexibility and professional risk prevention to these requirements.

So the objective of this session to present the studies developed on this theme in different labs in terms of modelling, methodologies, knowledge, simulation, industrial application. So to allow scientific exchanges between the participants.

List of topics:

Health and safety, Human – robot collaboration, working conditions, leeway and production management, human factors, well-being in the factory, human and technology complementary, safe working place, human centred design, work-place organization, integrated prevention,

Keywords:

Health and Safety, Human robot collaboration, Factory of the future, human factors,