

## **Keynote: Human-Oriented Product Design**

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As customers' needs are being diversified, the concept of human-oriented product design is being essential in product development process. The objective of this work is to develop systematic human-oriented product design methodologies based on the digital models of both humans and products. In a good design of a product intended for human use, ergonomics would be a key factor. A typical product development process involves repeated trial-and-error experiments on ergonomics. Such a process is costly, time consuming and does not allow easy optimization of the ergonomic features of the product. In order to reduce cost and time, numerical approach and haptic simulation could be an alternative solution. Numerical simulations involve digital human models that are integrated directly with the numerical product models. Physically accurate simulations of the human-product interactions are embedded into the design process, enabling the engineers to design products intuitively yet systematically and quantitatively.

**Keywords:** Human-oriented product design, Digital human model, CAE simulation, Ergonomics