**DIMSAI PhD Programme: Seminar Announcement**

May 20th, 2021. h: 14:30 – 17:00

Location: Forlì, via Fontanelle 40 – Classroom: Aula Magna “Enrico Mattei”

TEAMS Virtual Room: [DIMSAI virtual AULA](https://teams.microsoft.com/l/channel/19%3a1034d80865894c51b9647424e28b8f5a%40thread.tacv2/Generale?groupId=f39a696f-f3bc-45e6-9925-1edd3f052a27&tenantId=e99647dc-1b08-454a-bf8c-699181b389ab)

**MODERN PRODUCTION METHODS AND PROCESSES**

Speaker: Dr. N. Vincenzi (Bucci Automations S.p.A.)

**Abstract**

The aim of the seminar is to offer an overview of the modern industrial production that is experiencing and going through a moment of strong and profound change. Today more than ever, the need for productivity requires to be accompanied by flexibility: to be competitive, therefore, it is necessary to remain productive without (expensive) inventories by embracing the paradigms of **lean and smart manufacturing**, drastically shortening the chain that goes from demand of the customer to fulfil the order. In this perspective, production plants and, therefore, machine tool manufacturers and automation suppliers, are called to think of new production structures, able to reduce the crossing times of the line (from order to delivery), certainly assisted by the powerful IT support that the thrust of the fourth industrial revolution (**Industry 4.0**) has made available and usable. Automation and machine tools, to work together 24 hours a day, 7 days a week, even on unmanned shifts, must be monitored, even remotely, and this is why digitalization becomes focal and fundamental.

Parallel to this reorganization model, a further (and necessary!) effort is also required to the supply chain to adopt **sustainability-oriented measures**, investing resource to reduce the impact of production on humans and the environment. In this perspective, the allocation of the carbon emissions must not only be based on a calculation oriented to the producer of the good, but it is also necessary to consider the flows of emissions necessary to move the good from the (often delocalized) country of production to the country of final consumption: an efficient production model is the one that does not simply minimize national emissions but the total ones.

Lastly, in this new panorama of smart and sustainable production, focused on **high levels of automation and reconfigurable machines**, it is always necessary to keep in mind the human resources: the lifelong learning of staff, the growth of the young engineer, the management of highly qualified figures (PhD) that necessarily derive from strong synergies between the industrial and university worlds. Another challenging aspect, this, which will be key for the years to come with the aim of stimulating the concept according to which "**computers are for answers, people are for questions**".

**Biosketch**

Nicolò Vincenzi is a mechanical engineer and a PhD in Machine Design. After some years as post-doc researcher and contract professor at the University of Bologna he moved to *Bucci Industries group – company Bucci Automations*. He is now responsible for the mechanical design of two brands of Bucci Automations: (i) *Giuliani*, which is a machine tool builder, and (ii) *Vire*, which is an automatic packaging machine builder. He is also involved in several R&D and strategic project of the Bucci Industries group.

Expert in mechanical joints, bolted and welded connections, mechanical transmissions, lightweight design, failure analysis and precision mechanics.