

Institucija s koje dolazi: Fakulteta za Strojništvo Univerze v Ljubljani

Naziv/tema predavanja: **Osvajanje novih tehnologij u kombinaciji realno i virtualno**

Jezik na kojem de biti održano predavanje: **hrvatski** u trajanju 45 minuta

Sažetak predavanja: Tool makers are usually required to deliver a forming tool capable to start production of parts with predefined quality. In other words, toolmakers are required to develop the forming technology and to build it into the tool. When talking with their potential business partners tool makers must predict: the technology, the price and delivery time of tools, all this with a high degree of warranty. This is a very hard demand as tool production is a single production, sometimes with some similarities with previously manufactured ones but nearly always they consist new and innovative solutions. When trying to minimize risks in the technology development and tool-designing phase and later to shorten traditional "trial-error-repair-trial-..." procedures under real conditions, numerical methods have proved to be very helpful. In this way the predefined technology is transferred into the "virtual world", where the feasibility studies and sensitivity analyses are performed before starting the production of real tools. Although the virtual area is very promising as regards flexibility, speed, costs, general and parametric system stability analysis, it is also necessary that the entire process, from the first idea to mass production, should have some test/control points based in reality. The forming tool is never an exact negative of the part to be produced; forms are different because of heat generation and heat transfer, elastic deformations/elastic recovery of the part and the tooling/machine system. It can therefore be concluded that the virtual forming process development has to be experimentally evaluated and the obtained information used for the fine tuning of CAx tools. Finally some case studies will be discussed where combinations real & virtual & rapid (in small real quantities) have been very successfully applied in the real practice.