

Naziv istraživanja: **Istraživanje visokoproduktivne obrade odvajanjem čestica na inteligentnim obradnim sustavima**

Sažetak: Ishodišni motiv ovog istraživanja je pretpostavka (hipoteza) da se integriranjem sustava za monitoring stanja alata i obradnog sustava može ostvariti izvorna koncepcija integriranog ispitivanja obradivosti, a koja je na MIT-u, USA prethodno ocijenjena kao nužan i ostvariv doprinos uspješnom razvoju inteligentnih obradnih sustava. Glavni razlog zašto integrirano ispitivanje obradivosti još nije zaživjelo u punom smislu leži u problemu da i nakon više od trideset godina istraživanja sustava za monitoring stanja alata još uvijek ne postoje pouzdana i jednostavna rješenja za industrijsku primjenu, te je potreban dodatni istraživački napor osobito u području visokoproduktivne obrade odvajanjem čestica. Cilj je postići funkcionalni sustav za nadzor i adaptivno upravljanje procesom. Kao rezultat predloženog istraživanja očekuje se metoda za određivanje pouzdanijih tehnoloških podloga s pratećom bazom podataka za postizanje visokoproduktivnih obrada te posljedično bolja iskoristivost inteligentnih obradnih sustava. Istraživanje će podići razinu prepoznatljivosti i kompetencija Laboratorija za obradu odvajanjem čestica i članova istraživačkog tima na Tehničkom fakultetu Sveučilišta u Rijeci u području istraživanja procesa visokoproduktivne obrade i njegovog dinamičkog karaktera, utjecaja parametara rezanja i geometrije alata na izlazne vrijednosti procesa rezanja (sile rezanja, postojanost alata, hrapavost obrađene površine itd.) te modeliranja, simulacije i optimizacije visokoproduktivne obrade na inteligentnim obradnim sustavima. Postizanje funkcionalnog sustava za nadzor i adaptivno upravljanje procesom omogućit će pozicioniranje Laboratorija i u pogledu transfera znanja prema gospodarstvu i edukacijskog centra po pitanju visokoproduktivne obrade odvajanjem čestica.

Istraživački tim:

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