



Summary table

Related research lines for 2024 expressions of interest from UPV supervisors.

ID	RESEARCH LINES	INTEREST ON PROPOSALS REGARDING:	DISCIPLINES*
S01	Virtual avatar, XR for training, Persuasive learning, organizational neuroScience, affective computing	Virtual avatar, XR for training, Persuasive learning, organizational neuroScience, affective computing	S5, L5, G1, G2, E3
S02	Nanophotonics; photonic integrated circuits; cavity optomechanics; plasmonics	Nanophotonics; photonic integrated circuits; cavity optomechanics; plasmonics	G2. Nanotechnology, nano-materials, nano engineering P2. Photonics P2. Optics, non-linear optics and nano-optics P5. Photonic integration, photonic integrated circuits P5. Plasmonics and metamaterials
S03	(1) nanoparticles for drug delivery, (2) nanomotors applied to nanomedicine, (3) chemical communication between nanoparticles, (4) nanocages for biological applications (5) nano and molecular systems for sensing	(1) nanoparticles for drug delivery, (2) nanomotors applied to nanomedicine, (3) chemical communication between nanoparticles, (4) nanocages for biological applications (5) nano and molecular systems for sensing	Candidates are required to have experience in chemistry. Experience in biology is valuable but not compulsory
S04	Precision Livestock Farming, Non-ruminant Feeding, Insect Feeding, Animal nutrition biotechnology, Genetics-Nutrition Interaction	Precision Livestock Farming, Insect Feeding, Animal nutrition biotechnology	Animal science, biotechnology, nutrition, insect science,
S05	1-Molecular Biology of stress response, aging mechanisms, and evolutionary pathways. 2-Yeast biotechnology for biopharmaceutical manufacturing. 3-Engineering synthetic antibodies for therapeutic and diagnostic applications.	1-Development of artificial intelligence tools targeted for the rational design of synthetic antibodies. 2-Precision fermentation of bioactive proteins and peptides. 3-Implementation of cell-free systems for protein synthesis	L1,L2,L3,L4,L6
S06	Experience in the analysis of encephalographic signals for the assessment of cognitive impairment and neurogenic dysphagia. Extensive experience in obtaining electromyographic biomarkers and development of Artificial Intelligence systems for the prediction of premature birth, early detection of sarcopenia and diabetic foot neuropathies.	1.Obtaining and evaluation of biomarkers based on electroencephalography and electromyography for screening and monitoring the effect of therapeutic actions in patients with post-stroke neurogenic dysphagia. 2. Application of AI to the detection of childbirth in women threatened with premature birth who may be under different phases of tocolytic therapies. 3. Early detection of cognitive impairment or other disorders such as autism based on EEG.	Artificial Intelligence, Electroencephalography, Prediction of premature birth, Electromyography,
S07	Land use/Land cover change monitoring. Forest structure assessment and fuel mapping using LiDAR and satellite imagery. Multitemporal urban fragmentation analysis and relations with socio-economic variables. Crop monitoring and yield prediction using time series analysis.	Predicting biophysical and forest variables through Artificial Intelligence and point cloud processing. Land use/Land cover change detection using deep learning and time series images. New mapping technologies for precision agriculture and crop management	Earth observations from space/remote sensing. Terrestrial ecology, land cover change. Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video). Agriculture / Forestry / Rural Development.



S08	AI Security, AI Privacy, Human-centred AI, Human-centred Security, Human-centred Privacy	AI Security, AI Privacy, Human-centred AI, Human-centred Security, Human-centred Privacy	Human computer interaction; Artificial intelligence, intelligent systems, multi agent systems; Machine Learning;
S09	Valorization of agrifood waste for food packaging applications / Development of biodegradable laminates for food packaging / Active edible films and coatings for extending the shelf-life of food.	Valorization of agrifood waste for food packaging applications / Development of biodegradable laminates for food packaging	Physical chemistry of biological systems; coatings and films; polymers and plastics; food chemistry; Agricultural waste.
S10	Electrohysterography study (electrical activity of the uterus) for early detection of premature birth; - Electroencephalography study (electrical activity of the brain) for early detection of neurodegenerative diseases; - Multimodal electroencephalography-electromyography study for early detection of dysphagia and monitoring of the efficacy of rehabilitation techniques	Electrohysterography study (electrical activity of the uterus) for early detection of premature birth; - Electroencephalography study (electrical activity of the brain) for early detection of neurodegenerative diseases; - Multimodal electroencephalography-electromyography study for early detection of dysphagia and monitoring of the efficacy of rehabilitation techniques	Bio-signal acquisition - Biomedical instrumentation - Digital information processing - Statistical analysis - Artificial intelligence - Modelling of electrophysiological activity of the uterus

*MSCA Keywords list: <https://rea.ec.europa.eu/system/files/2021-10/MSCA%20Keywords.pdf>