CSC Research Subjects 2026

Polytech

FRANCE

Material science

Title	Polytech school	Professor	Subject number
Multiscale study of ions diffusion in concrete: application for Durability of low-impact materials	Nantes	AMIRI	1
Mechanical performance of vegetal concrete strengthened with natural FRCM composites	Clermont-Ferrand	AMZIANE	2
Reliability assessment of notched timber components subjected to stochastic mechanical and environmental loading	Angers	BIGAUD	4
Phase Change Kinetics under Supercooling during Partial Thermal Cycles: A Molecular Dynamics Approach	Annecy	FRAISSE	8
Behavior law of roving yarns: from fiber bundle mechanical behavior to the equivalent homogeneous material behavior law	Orléans	HIVET	10
Investigations on the intermediate regime between polaritonic and photonic lasing in ZnO based waveguides	CLERMONT	LEYMARIE	13
Solar-Activated Nanoparticles for Conductive Cement in Energy-Active Envelopes: A Molecular Dynamics Study	ANNECY	MENEZZO	14
Role of activated carbon on Interfacial Zone Stiffness in Composite Cement/Activated Carbon Materials	ORLEANS	RAMEZZANI	15
Development of sustainable composites based on reinforcements from agricultural waste: Towards optimizing mechanical properties and integration into the circular economy.	ANNECY	SAFFRE	19

Chemical science

Title	Polytech school	Professor	Subject number
From hydration to solubilization of Fe bearing LDH: electronic structure and reactivity in environmental conditions	NANCY	COUSTEL	5
Development of innovative bioformulations of biostimulants based on microalgae polysaccharides	CLERMONT	ROCHE	16
Protein Aductomics: A Novel Approach for Deciphering the Exposome of Cancer in Breast and Colorectal Tissues Using High-Resolution Mass Spectrometry	NICE	DAGNINO	6

Life science & Biomedical Engineering

Title	Polytech school	Professor	Subject number
Protein Adductomics: A Novel Approach for Deciphering the Exposome of Cancer in Breast and Colorectal Tissues Using High-Resolution Mass Spectrometry	NICE	DAGNINO	6
Development of a Predictive Model for Atherosclerotic Plaque Rupture, Thrombosis, and Infarction Risk in Complex Vascular Geometries	ANNECY	LAGACHE	12
Intercalation of phosphate into green rust and potential implications on the environmental conditions permetting life to emerge	NANCY	RUBY	17
Genetic and molecular dissection of signaling pathways driving endometriosis	NICE	SCHEDL	21
Monitoring of cold plasma medical treatments by means of AI analysis of in-situ measurement	ORLEANS	STANCAMPIANO	22
Biomechanical Modeling of the Ankle and Its Role in Postural Control: Towards Innovative Clinical and Preventive Application	ANNECY	TABOUROT	23
Targeting the Peroxisome Proliferator-Activated Receptor PPARβ/δ as a Novel Approach in Cancer Therapy	NICE	WAGNER	28
Towards an acoustic wave driven lab on a chip	NANCY	SARRY	20

Computer Science & Digital modeling

Title	Polytech school	Professor	Subject number
Multi-view Learning for Inherited Cardiomyopathy Analysis	Lyon	BENABDESLEM	3
3D numerical assessment of the soil/pile/structure interaction – Static and seismic loadings	Grenoble	DIAS	7
Image Texture Analysis using Enhanced Deep Neural Networks	ORLEANS	TREUILLET	26
Advanced Numerical modeling of dynamic response of train-track ground system for high speed ballastless tracks	LILLE	SADEK	18

Environment and civil engineering

Title	Polytech school	Professor	Subject number
AI-driven digital twin framework for handling coupled multi-domain problems in building performance simulation. Application to adaptative façade towards flexible and positive energy / carbon buildings	NICE	FRANQUET	9
Transport phenomena of carbon capture process in microfluidics through in-situ investigations	NANTES	TARLET	24
Study of shrinkage and swelling of clays: coupled approach between modeling and full-field measurement method for the development of a methodology adapted to buildings on shallow foundations	CLERMONT	TOUSSAINT	25
Unified modeling formalism for optimal design of Induction Thermography Non-Destructive Testing (NDT)	NANTES	TRICHET	27
Raw earth construction and its resilience for present and future heat waves.	ANNECY	WOLOSZYN	29