

Ponentes Internacionales

Alejandro Strachan



Biography

Alejandro Strachan is the Reilly Professor of Materials Engineering at Purdue University, the Director of NSF's Intelligent Codesign Cloud Lab for Non-Equilibrium and Low-Dimensional Materials Programmable Cloud Lab, Co-Director of nanoHUB, and Purdue's Office of Research Fellow for Intelligent Twins and Digital Innovation. Before joining Purdue, he was a Staff Member in the Theoretical Division of Los Alamos National Laboratory and worked as a Postdoctoral Scholar and Scientist at Caltech. He received a Ph.D. in Physics from the University of Buenos Aires, Argentina. Prof. Strachan's research focuses on predictive atomistic and multiscale models grounded on first principles to advance our ability to understand, design, and deploy materials. His recent work integrates machine learning and artificial intelligence with physics-based modeling to tackle critical scientific and engineering challenges in areas such as energy, electronics, and manufacturing. In addition, Strachan's scholarly work includes cyberinfrastructure to make simulations, models, and data widely accessible and useful in research and education to accelerate innovation. nanoHUB has served over 200,000 simulation users and reached 800+ US institutions of higher education. Prof. Strachan has published over 200 peer-reviewed scientific papers and his contributions to research and education have been recognized by several awards, including the Early Career Faculty Fellow Award from TMS in 2009, an R&D 100 award in the category of software and services for nanoHUB (2020), and the Reilly Chair Professorship in 2023

Alexander Laikthman



Biography

Prof. Alex Laikhtman is an Associate Professor in the Physics Department at HIT – Holon Institute of Technology (Israel), where he heads the Advanced Materials Characterization laboratory. He received his Ph.D. from the Technion – Israel Institute of Technology, specializing in physical chemistry of surfaces. His research focuses on advanced materials, nanoscience, surface chemistry, microscopy and spectroscopy, with applications in photovoltaics, energy conversion, and transition-metal dichalcogenide nanoparticles and nanotubes. He has published over 50 peer-reviewed papers in high quality journals and leads international collaborations, including research on hybrid perovskite/WS₂/MoS₂ nanocomposite solar cells electrocatalytic hydrogen production, and improvement of batteries performance with inorganic nanoparticles and plasma treatments.

Alexander Yarin



Biography

Professor Dr. Habil Yarin is Richard and Hill Professor and UIC Distinguished Professor at The University of Illinois Chicago, USA. He is Fellow of the American Physical Society, the author of 6 books, 12 book chapters, 501 research papers, 12 patents. His invention was licensed to the company 'Ivoclar' (a world-wide manufacturer of dental materials) and from mid-2024 is marketed in Europe and the United States under the commercial name VivaDent Aerosol Reduction Gel. Professor Yarin was awarded The Gutwirth Award, The Hershel Rich Prize, and The Prize for Technological Development for Defense against Terror of the American-Technion Society.

Christine Fröhling



Biography

Christine Fröhling is a plastics engineer and has several years of professional experience in R&D and project management positions in the plastics industry. Since 2016, she has worked at Lohmann GmbH & co. KG, Germany. Within the current position, she is the technical lead for the development of isolation materials in EV battery applications for major OEMs (automotive manufacturers). Christine holds a diploma in plastic engineering and an MA degree in Innovation and Technology Management with a focus on innovation and intercultural competence. She is educated in project management, training, and coaching.

Elena Holban



Biography

Dr. Ecol. Elena HOLBAN, Deputy Operations Manager of INCDPM, holds a PhD in Chemistry (2018). With over 24 years of experience, she participated in over 26 R&D projects, 34 environmental impact studies, 17 Web of Science indexed papers, and over 40 conference presentations.

Flor Eliana Díaz Cruces



Biography

Eliana Díaz Cruces is a legal scholar and lecturer researcher at Universidad a Distancia de Madrid (UDIMA), where she is affiliated with the Faculty of Legal Sciences and the LEGOS research group. Her work focuses on law, environmental law, climate rights, human rights, sustainability and innovation, with a growing interdisciplinary emphasis on the regulatory and governance challenges of emerging biomedical technologies. She has contributed to research on corporate sustainability, climate law and the legal framework of advanced biomaterials and 3D bioprinting, including publications linked to European regulatory and ESG debates. Since 2025, she has served as a full-time Lecturer–Researcher at UDIMA, and she has also held teaching responsibilities in environmental and constitutional, human and environmental rights contexts.

Frederico B. de Sousa



Biography

Frederico Barros de Sousa is a Professor of Chemistry at the Federal University of Itajubá (UNIFEI), Brazil, where he leads research in supramolecular and functional materials chemistry. His work focuses on cyclodextrin-based host-guest systems, molecular recognition, and the rational design of drug delivery platforms, combining thermodynamic and spectroscopic studies with the development of polymeric and hybrid materials for controlled release. His research also encompasses stimuli-responsive materials, particularly photochromic systems based on spiropyrans, as well as metal coordination and lanthanide complexes. His research integrates molecular-level understanding with materials design to develop functional systems for pharmaceutical, sensing, and photonic applications.

György DEÁK



Biography

Eng. György DEÁK, PhD. Habil. Associate Member of the Academy of Romanian Scientists, Associate PhD Supervisor in Environmental Engineering at the National University of Science and Technology Polytechnic Bucharest, Habilitated Doctor in Environmental Engineering (Technical University of Cluj-Napoca), and a Scientific Researcher and Doctor of Science recognized by the Romanian Ministry of Education. He has over 90 research projects, 180 publications, 28 patents on environmental monitoring systems, and 14 books, and is member of the Romanian Government & Advisory Board for Sustainable Development, the Ministerial Committee for Emergency Situations, and the Scientific Council of the Danube Delta Biosphere Reserve Authority.

Isabel María Martínez Alcalá



Biography

Isabel M^a Martínez Alcalá holds a PhD in Environmental Sciences and is a researcher at Universidad Católica San Antonio de Murcia (UCAM, Spain). Her research focuses on the occurrence, fate, and removal of emerging contaminants, including pharmaceuticals, microplastics, and antibiotic resistance genes (ARGs) in aquatic systems. She integrates advanced analytical techniques (LC–MS/MS, qPCR) with ecotoxicological assessment and risk analysis. She has authored over 30 peer-reviewed publications and has participated in several national and European research projects. She also serves as Editor for the Journal of Water and Health. Her work explores innovative treatment strategies, including engineered adsorbent materials, membrane technologies, and nature-based solutions, with a strong One Health perspective.

Lucia Doyle



Biography

Dr. Lucía Doyle is a materials scientist whose research focuses on the development, processing, and characterization of advanced materials and manufacturing processes, with an emphasis on understanding processing–structure–property relationships and their implications for material performance and sustainability. She completed her PhD with Summa Cum Laude distinction, conducting research on polymeric foams and multifunctional sandwich structures for pre-insulated district-heating pipes. Her doctoral research combined materials development, advanced manufacturing, and process engineering, and resulted in ten scientific publications. It was recognized with the Euroheat & Power Student Award for its industrial relevance. She subsequently carried out a Marie Skłodowska-Curie Postdoctoral Fellowship at IMDEA Materials, where she continued her research in advanced materials and manufacturing, including the development and characterization of additively manufactured polymeric cellular structures. Her research spans industrial and academic environments across Belgium, Germany, and Spain and has involved several European research projects addressing innovative material systems and sustainable engineering solutions. She is currently a senior researcher at Universidad Alfonso X el Sabio (UAX), where she works on sustainable advanced materials. Her current research focuses on self-healing metallic materials, investigating their processing, microstructure, and mechanical performance to develop more durable and resource-efficient engineering materials.

Monica Matei



Biography

Dr. Eng. Monica MATEI, Scientific Manager of INCDPM, with over 50 publications, books, and patents in the field of environmental protection. She holds a PhD since 2014, studying the consequences of European climate variability mechanisms on temperature and precipitation trends in Romania. At the same time, she participated as project manager/responsible in numerous research projects in the field of environmental protection.

Mădălina Boboc



Biography

Dr. Eng. Mădălina BOBOC, Operations Manager of INCDPM, holds a PhD in Engineering and Management in agriculture and sustainable development. She has led and participated in over 10 national/international environmental protection projects and authored over 30 Web of Science/IDB-indexed papers and 4 indexed books.

Natalia Enache



Biography

Dr. Eng. Natalia ENACHE is specialized in climate change assessment, environmental analysis and materials research, with interdisciplinary expertise in material characterization and environmental applications. Her research integrates environmental and materials science approaches, with a focus on sustainable solutions and the assessment of interactions between materials and environmental systems. She has more than 20 ISI/BDI publications, and has participated in more than 20 national and international R&D projects.

Nayeli Yajaira Gómez Castillo



Biography

Nayeli Gómez Castillo is a biomedical engineering researcher and lecturer at Universidad Alfonso X el Sabio (UAX) in Madrid. She has authored high-impact scientific publications and presented her work at international conferences across the USA, Panama, and Ecuador. Currently a PhD candidate at UAX, her research focuses on advanced biofabrication using electrospinning and 3D bioprinting. She specializes in developing biomimetic nanofibrous scaffolds designed to replicate the extracellular matrix (ECM) and harness mechanotransduction to guide cellular behavior. Her work aims to provide innovative solutions for complex tissue regeneration, including skin and osteochondral interfaces.

Vincent Leon



Biography

Dr. Vincent Leon is a polymer and materials chemist specializing in adhesive technology and industrial innovation. He holds a PhD in chemistry from the University of Orléans (France) and Argonne National Laboratory (Chicago, USA) and has international research experience in France, Germany, Spain, and the United States. Since 2013, he has worked at Lohmann GmbH in Germany, developing product solutions for major OEMs (automotive manufacturers), focusing on functional adhesives such as electrical and thermal conductivity, flame retardancy, debonding-on-demand. Previously, he worked for Henkel and academic institutions on advanced polymers and nanocomposites. He has authored 31 patent applications, with 8 granted, as well as a book chapter, and published in leading scientific journals.

Vladimir Reukov



Biography

Vladimir Reukov, Ph.D., is an Associate Professor of Polymer, Fiber, and Textile Science at the University of Georgia. His research focuses on biomaterials, polymeric fibers and scaffolds, medical textiles, and advanced functional materials. His work combines materials science, polymer chemistry, and bioengineering to develop fiber-based systems for tissue engineering, cell culture, antimicrobial applications, and sustainable technologies. He is also actively involved in translating academic research into commercially relevant technologies.

Marisol Koslowski



Marisol Koslowski is a Professor of Mechanical Engineering and Associate Dean for Global Engineering Programs and Partnerships. She received her BS degree in Physics in 1997 from the University of Buenos Aires, Argentina, and her MS and PhD degrees in Aeronautics in 1999 and 2003 from the California Institute of Technology. She was a Technical Staff Member in the Theoretical Division at Los Alamos National Laboratory before joining Purdue in 2005. She made contributions to the development of theoretical and computational models to study the mechanical, thermal, and chemical behavior of materials. She leads an interdisciplinary research program with impact in nano and microelectronics, drug and food processing, polymer composites, alloys, and energetic materials. Her group focuses on the effects of microstructure, defects, and interfaces to control the behavior of materials.

National Speakers

Andrea Zarate



Biography

Ing. Andrea Zárate, Civil Engineer, currently serving as the Director of the Civil Engineering Department at Universidad Nacional de Chimborazo (UNACH) in Ecuador. I hold a Master of Engineering in Civil Engineering from University College London (UCL). My research focuses on eco-friendly cementitious composites, specifically lightweight self-compacting concrete incorporating natural fibers, as well as concrete technology and seismic vulnerability assessment of structures. Beyond my academic leadership and teaching, I am passionate about integrating Building Information Modeling (BIM) methodologies into civil infrastructure projects.

Andrés Marcillo Zapata



Biography

Andrés Marcillo Zapata is a Civil Engineer with a Master's degree in Concrete Engineering from the UPV and a Master's degree in Civil Engineering, specialising in Geotechnical Engineering, from the UTE. He currently works as a lecturer at the National University of Chimborazo. His main academic and research interests focus on concrete engineering, the development, characterisation and application of new construction materials, as well as the use of renewable and sustainable materials in civil engineering. He has been involved in research into geopolymers, natural and synthetic fibres, pumice, lightweight concrete and materials for structural reinforcement, with a view to developing innovative and sustainable solutions for the construction sector.

Christian Narvaez Muñoz



Biography

Christian Narváez-Muñoz is a mechanical engineer and researcher working at the intersection of microfluidics-based manufacturing processes, computational mechanics, and artificial intelligence. He holds an MPhil in Aerospace Engineering from the University of Manchester (UK) and a PhD in Computational Mechanics from the Universitat Politècnica de Catalunya (Spain). His research interests include electrospinning, electrohydrodynamic-printing, nanofiber and membrane engineering, multiphysics modeling, and data-driven approaches for process monitoring and optimization, with applications in functional materials, sensing, and environmental technologies. He is affiliated with the International Centre for Numerical Methods in Engineering (CIMNE) and the Universidad de las Fuerzas Armadas ESPE, and collaborates with research groups in the United States, Spain, Brazil, and Ecuador.

Edwin Vásconez



Biography

Edwin Vásconez holds an M.Sc. in Physics from Universidad San Francisco de Quito (USFQ), Ecuador, with a background in experimental condensed matter physics. He is currently pursuing a Ph.D. in Advanced Materials at USFQ, where his research focuses on unconventional spintronics in chiral materials. His work combines first-principles DFT calculations, symmetry-based analysis, effective Hamiltonian modeling, and experimental approaches to investigate chirality-dependent spin and orbital phenomena, spin textures, and spin-to-charge conversion mechanisms. His broader research interests include solid-state physics, low-dimensional and quantum materials, computational materials science, and the interplay between crystal symmetry, electronic structure, magnetism, and transport in emerging spintronic systems.

Ezequiel Zamora Ledezma



Biography

Ezequiel Zamora Ledezma is a biologist with a PhD in Ecosystem and Agronomical Sciences from the University of Montpellier (France). He is a Full Professor and Vice Dean of Research at the Technical University of Manabí (Ecuador), where he leads the Agroecosystem Functioning and Climate Change Research Group (FAGROCLIM) and coordinates the Master's Program in Agroecology and Climate Change. Prior to his academic career in Ecuador, he worked for 15 years at PDVSA-Intevep (Venezuela) within the Environmental Department, specifically in the Hazardous Waste Management and Terrestrial Ecosystem Restoration Group. During this period, he developed multiple applied environmental engineering projects focused on oil and gas industrial processes. His research focuses on the functioning of agroecosystems under climate change, integrating agroecology, soil-plant interactions, and sustainable agricultural systems. In parallel, his work explores the development and environmental application of emerging materials for water, soil, and atmospheric remediation. This includes the design and evaluation of nano-bio-formulations, nanofertilizers, and nano-amendments for agricultural use, combining physicochemical characterization with ecotoxicological assessment, particularly through phytotoxicity assays, to ensure their efficiency and environmental safety. He actively promotes interdisciplinary and international research collaborations across Latin America and Europe, contributing to the development of sustainable and climate-resilient agricultural value chains.

Felipe Fernández



Biography

Felipe Fernández is a faculty member in Mechanical Engineering at Universidad San Francisco de Quito (USFQ). He earned his Ph.D. in Mechanical Engineering from the University of Illinois at Urbana–Champaign in 2019 and subsequently worked as a postdoctoral research scientist at Lawrence Livermore National Laboratory from 2019 to 2021. His research focuses on computational mechanics and structural optimization, with particular emphasis on manufacturable design, efficient numerical methods, composite structures, and additive manufacturing. His work seeks to integrate optimization methods more directly into engineering design and manufacturing workflows, combining computational efficiency with practical manufacturability.

Gissele Mosquera



Biography

Gissele Mosquera is a PhD student in Advanced Materials at the Universidad San Francisco de Quito, Ecuador. She holds a BSc in Mechanical Engineering from the Escuela Politécnica Nacional and an MSc by Research in Corrosion and Protection from the University of Manchester. During her MSc, she investigated hydrogen embrittlement in high-strength aluminium alloys, focusing on the relationship between hydrogen, microstructure, and mechanical failure. Her professional experience includes mechanical design and engineering in the oil and gas industry, as well as research collaboration with Yachay Tech on materials for hydrogen production. She is currently investigating the relationship between processing, microstructure, and performance in metallic coatings produced by thermal spray and additive manufacturing processes. Her research focuses on interparticle interfaces, microstructural heterogeneity, corrosion, and material degradation under demanding environments, with the broader aim of understanding how processing influences the performance and durability of advanced engineering materials.

Henry Pacheco



Biography

Henry Antonio Pacheco Gil holds a PhD in Engineering Sciences from the Central University of Venezuela. He undertook postdoctoral research in remote and proximal sensing applied to the agricultural sector at the University of Córdoba (Spain). He holds a Master's degree in Physical Geography and a teaching qualification in Earth Sciences, both awarded by the Libertador Experimental Pedagogical University (Caracas, Venezuela). He is also certified as a Remote Pilot of Unmanned Aerial Systems (UAS) by the General Directorate of Civil Aviation of Ecuador. He currently works as a Senior Lecturer and Researcher at the Technical University of Manabí (Ecuador). His work focuses on the integration of remote sensing, satellite imagery, drones, geospatial analysis and artificial intelligence to generate strategic information for decision-making in production systems.

Joan Manuel Rodríguez-Díaz



Biography

Dr. Joan Manuel Rodríguez Díaz holds a Bachelor's degree in Chemistry and a Master's degree in Process Analysis in the Chemical Industry from the Central University "Marta Abreu" of Las Villas, Cuba, and a Ph.D. in Analytical Chemistry from the Universidade Federal de Pernambuco, Brazil. His doctoral and postdoctoral training focused on bioadsorbents, advanced analytical chemistry, wastewater treatment, and non-conventional technologies for environmental remediation. Since 2016, he has served as a Full Professor at the Technical University of Manabí, Ecuador, where he coordinates the Master's Program in Chemical Engineering with a specialization in Chemical Processes and leads the Laboratory of Chemical and Biotechnological Analysis. In 2018, he founded the research group Sustainable Technologies and Advanced Nanomaterials (TECNANO). His research integrates analytical chemistry, chemical engineering, environmental nanotechnology, and sustainable water treatment. His main areas include adsorption and biosorption, advanced oxidation processes, catalytic and photocatalytic systems, hybrid nanomaterials, biomass-derived adsorbents, and the removal of emerging contaminants such as pharmaceuticals, pesticides, dyes, heavy metals, and other persistent pollutants. Dr. Rodríguez has established strong collaborations with research groups in Latin America and Europe, including institutions in Brazil, Portugal, Spain, Chile, and Cuba. He has supervised numerous master's and doctoral students, participated in international research projects, and contributed extensively through more than 100 scientific publications, book chapters, editorial work, and more than 150 international conferences. His scientific impact is reflected in an h-index of 26. His work supports the development of sustainable technologies for water management, environmental remediation, biomass valorization, and circular economy.

Jorge Israel Peñafiel



Biography

Jorge Israel Peñafiel Alvarado is a lecturer on the Civil Engineering degree programme at the Pontifical Catholic University of Ecuador – Ibarra, and a PhD candidate in Engineering and Industrial Production at the Polytechnic University of Valencia, where he is affiliated with the Institute of Materials Technology. He is a mechanical engineer and holds a Master's degree in Engineering, Processing and Characterisation of Materials. He has industry experience in project management, assembly supervision, maintenance and quality control, with a focus on process optimisation. His research focuses on the development, processing and characterisation of sustainable thermoplastic materials derived from proteins, biopolymers and biocomposites through extrusion and injection moulding.

Patricio Riofrío



Biography

Ph.D. in Mechanical Engineering (Structural Integrity) | University of Coimbra; M.Sc. in Manufacturing Systems | Tecnológico de Monterrey; Diploma in Welding Inspection | Escuela Politécnica del Litoral; Mechanical Engineer | Escuela Politécnica Nacional Full Professor and Researcher at the University of the Armed Forces (ESPE). Director of the multidisciplinary research project: Fabrication of medical prototypes not tested on humans using high-metal-load polymer filaments via 3D printing. Member of the ENERGOMAT Research Group (Materials and Manufacturing Technology) in University of the Armed Forces (ESPE). Areas of interest: welding, fatigue, mechanical performance of materials, structural integrity and manufacturing processes. Author of various scientific articles and speaker in national and international conferences related to these fields of interest.

Organizing Comittee

Alfredo Valarezo G



Biography

Alfredo Valarezo Garcés, Ph.D. is a Full Professor, and researcher at Universidad San Francisco de Quito (USFQ), where he served as former Director of the Institute of Energy and Materials. He earned his Ph.D. in Materials Science and Engineering from Stony Brook University as a Fulbright Scholar and has developed a distinguished career in research and development in advanced materials.

His work focuses on thermal spray coatings, residual stress analysis, and process design, with applications in sectors such as energy, oil and gas, transportation, and power generation. He has led and participated in multiple projects funded by international organizations, including the U.S. Air Force and the National Institutes of Health (NIH), as well as collaborative projects with institutions such as the University of Edinburgh. He has published around 40 peer-reviewed publications, and a patent. He has led the CIMA organizing committee since its first edition.

Frank Alexis



Biography

Frank Alexis, Ph.D., is a lecturer and researcher at the University of San Francisco de Quito (USFQ), specialising in nanotechnology, biomaterials, advanced materials and sustainability. He holds a degree in Chemical Engineering and a Master of Science in Materials from the University of Montpellier, France, and obtained his Ph.D. in Materials Science and Engineering from Nanyang Technological University, Singapore. He undertook postdoctoral research at Harvard Medical School and conducted research at MIT. He has over 100 scientific publications and 14,000 citations in Scopus-indexed journals, with international recognition for the impact of his research. He has been recognised by *Nature Biotechnology* as a Top Translational Junior Faculty member. He has been ranked amongst the top 2 per cent of researchers worldwide in nanoscience and nanotechnology.

Lorena Bejarano López



Biography

Lorena Bejarano L. is a researcher in materials science and engineering, and professor at Universidad San Francisco de Quito (USFQ), where she currently serves as Head of the Mechanical Engineering Program and as a researcher at the Institute of Energy and Materials.

She earned both her M.S. and Ph.D. in Materials Science and Engineering from Stony Brook University in the United States and has developed an academic career focused on materials characterization, with particular expertise in scanning electron microscopy (SEM).

Her research spans coatings, biomaterials, and advanced materials, with a recent emphasis on sustainable energy, clean cooking, and technological solutions to address climate change. She is also a Global Affiliate Leader of the Society of Women Engineers (SWE) and an advocate for women in STEM. Lorena has led the CIMA organizing committee since its first edition.

Camilo Zamora Ledezma



Biography

Camilo Zamora Ledezma is an experimental physicist with a PhD obtained through a cotutelle between Université de Montpellier (France) and Universidad Central de Venezuela. His research focuses on biomaterials and nanomaterials applied to biomedicine, environmental remediation and food sciences, with emphasis on structural, mechanical and biological properties. He has authored more than 60 papers indexed in scopus and over a dozen book chapters and other publications. He has supervised 4 PhD students and numerous MSc and BSc theses. Since 2024, he has been a senior researcher and faculty member at Universidad Alfonso X el Sabio (UAX), where he leads the Bioengineering & Regenerative Medicine (BioRem) research group and serves as research coordinator at the School of Engineering, Architecture and Design.