ERC Advanced Grants 2022

List of Principal Investigators selected for funding

The statistics and final list of successful candidates are provisional. The Trade and Cooperation Agreement between the European Union and the United Kingdom allows for associating the UK to the current EU research and innovation funding programme, Horizon Europe, subject to the adoption of a Protocol. As this Protocol has not been adopted so far, the UK is still considered "non-associated" to Horizon Europe. Therefore, the successful proposals of applicants based in a country in the process of associating to Horizon Europe will be eligible for funding only if the relevant Horizon Europe association agreement applies by the time of the signature of the grant agreement. However, successful applicants from UK host institutions can still be funded, provided that they move to a host institution in an eligible country.

Last name	First name	Host Institution Local name	Host Institution name	Host country	Acronym	Title	Panel
GRILL	Leonhard	Universität Graz	University of Graz	AT	AMOS	Adsorbate Motors: Tricking Microscopic Reversibility on Surfaces	PE4
SCHMIEDMAYER	Joerg	Technische Universität Wien	Vienna university of Technology	AT	EmQ	Emergence in Quantum Physics	PE2
BINNEMANS	Koen	KU Leuven	KU Leuven	BE	CIRMET	Circular hydrometallurgy for energy-transition metals	PE11
LAPENTA	Giovanni	KU Leuven	KU Leuven	BE	TerraVirtualE	Planetary space simulations based on the particle description for electrons and ions.	PE9
PARDOEN	Thomas	Université catholique de Louvain	Catholic University of Louvain	BE	HAPI	Ultimate fracture toughness through thickness engineering	PE8
STANDAERT	François-Xavier	Université catholique de Louvain	Catholic University of Louvain	BE	BRIDGE	Connecting Symmetric and Asymmetric Cryptography for Leakage and Faults	PE6
VERSTRAETE	Frank	Universiteit Gent	Ghent University	BE	ISYS	"It's the Symmetry, Stupid!" Gearing Up Tensor Networks for the Topological Quantum Revolution	PE2
JUNGWIRTH	Pavel	Ústav organické chemie a biochemie AV ČR	Institute of Organic Chemistry and Biochemistry AS CR	CZ	Q-SCALING	Doing Charges Right: Modelling Ion-Controlled Biological Processes with the Correct Toolbox	PE4
JUNGWIRTH	Tomas	Fyzikální ústav Academie věd ČR v.v.i	Institute of Physics, Academy of Sciences of the Czech Republic	CZ	ALTERMAG	Altermagnetism and spintronics without magnetization and relativity	PE3
SIVIC	Josef	České vysoké učení technické v Praze	Czech Technical University	CZ	FRONTIER	Federated foundational models for embodied perception	PE6
ADAMS	Nikolaus	Technische Universität München	Technical University of Munich	DE	GENUFASD	Generative Understanding of Ultrafast Fluid Dynamics	PE8
BARTHOLDI	Laurent	Universität des Saarlandes	Saarland University	DE	ADA	Automata, Dynamics and Actions	PE1
BEETZ	Michael	Universität Bremen	University of Bremen	DE	FAME	FAME: Open-Ended Manipulation Task Learning with FAME (Future-Oriented Cognitive[1] Action Modelling Engine)	PE7
CHENG	Gordon	Technische Universität München	Technical University of Munich	DE	STROLL	Soft-exoskeleton suit To Restore Autonomous Locomotion	PE7

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DUBOURDIEU	Catherine	Helmholtz-Zentrum Berlin für Materialien und Energie	Helmholtz Centre Berlin for Materials and Energy	DE	LUCIOLE	Layering, Understanding, Controlling and Integrating Ferroelectric Polar Textures on Silicon	PE11
EISERT	Jens	Freie Universität Berlin	Free University of Berlin	DE	DebuQC	Delineating the boundary between the computational power of quantum and classical devices	PE2
FREY	Erwin	Ludwig-Maximilians-Universität München	University of Munich (LMU)	DE	CellGeom	The geometrical and physical basis of cell-like functionality	PE3
GATHER	Malte	Universität Zu Köln	University of Cologne	DE	HyAngle	Challenging the fundamental limit of angular dispersion by hybridizing light and matter	PE7
GLORIUS	Frank	Westfälische Wilhelms-Universität Münster	University of Munster	DE	HighEnT	Energy Transfer Catalysis: A Highway to Molecular Complexity	PE5
GOULIELMAKIS	Eleftherios	Universität Rostock	University of Rostock	DE	ULPIS	Ultrafast Picoscopy of Solids	PE2
GREVEMEYER	Ingo	Helmholtz-Zentrum für Ozeanforschung Kiel	Helmholtz - Centre for Ocean Research - Kiel	DE	TRANSFORMERS	The ‘orphan’ boundary type in plate tectonics: oceanic transform faults reconstructed	PE10
LEANDER	Gregor	Ruhr-Universität Bochum	Ruhr University Bochum	DE	SymTrust	Trust-by-Design – Strong Security Arguments for Symmetric Key Cryptography	PE6
LEMMER	Uli	Karlsruher Institut für Technologie	Karlsruhe Institute of Technology	DE	ORTHOGONAL	Origami inspired thermoelectric generators by printing and folding	PE7
MOCH	Sven-Olaf	Universität Hamburg	University of Hamburg	DE	Conformal-EIC	From conformal symmetries and integrability to the Electron-Ion Collider	PE2
NEUBERT	Matthias	Johannes Gutenberg Universität Mainz	University of Mainz	DE	EFT4jets	An Effective Field Theory for Non-Global Observables at Hadron Colliders	PE2
PLEFKA	Jan	Humboldt-Universität zu Berlin	Humboldt University of Berlin	DE	GraWFTy	High-Precision Gravitational Wave Physics from a Worldline Quantum Field Theory	PE2
ROEPKE	Friedrich	HITS gGmbH	HITS gGmbH	DE	ExCEED	Explaining Common Envelope Evolution and Dynamics in binary stellar systems	PE9
SIEBER	Stephan	Technische Universität München	Technical University of Munich	DE	breakingBAC	Breaking resistance of pathogenic bacteria by chemical dysregulation	PE5

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SOLANKI	Sami K.	Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.	Max Planck Society	DE	WINSUN	New Windows onto the Sun: Probing the Sun's magnetic field with an array of new missions and observatories	PE9
STURM	Sven	Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.	Max Planck Society	DE	LSYM	Lepton Symmetry Experiment – matter / antimatter symmetry test with electron and positron	PE2
ZELLER	Andreas	CISPA Helmholtz-Zentrum für Informationssicherheit	CISPA Helmholtz Center for Information Security	DE	S3	Semantics of Software Systems	PE6
ZUAZUA	Enrique	Friedrich-Alexander-Universität Erlangen-Nürnberg	University of Erlangen-Nuremberg	DE	CoDeFeL	Control for Deep and Federated Learning	PE1
BIRKEDAL	Lars	Aarhus Universitet	Aarhus University	DK	CHORDS	Compositional Higher-Order Reasoning about Distributed Systems	PE6
FOURNAIS	Soren	Aarhus Universitet	Aarhus University	DK	MathBEC	Mathematics of Bose-Einstein Condensation	PE1
JAIN	Mayank	Danmarks Tekniske Universitet	Technical University of Denmark	DK	LUMIN	Illuminating Charge Transport in Feldspar to Measure Rates of Earth Surface Processes	PE10
BISQUERT	Juan	Universitat Jaume I de Castellón	Jaume I University	ES	PeroSpiker	Perovskite Spiking Neurons for Intelligent Networks	PE8
CAPMANY FRANCOY	Jose	Universitat Politècnica de València	Polytechnic University of Valencia	ES	ANBIT	Analog Photonic Computation	PE7
FUENTE	Asunción	Centro Nacional de Información Geográfica	National Centre for Geographic Information	ES	SUL4LIFE	The trail of sulphur: from molecular clouds to life	PE9
MITCHELL	Morgan	Institut de Ciències Fotòniques	The Institute of Photonic Sciences	ES	Field-SEER	Field Sensors with Exceptional Energy Resolution	PE2
PALOMARES	Emilio	Institut Català d'Investigació Química	Catalan Institute of Chemical Research	ES	Excited	Engineering Excited States, Orbital Coupling and Quantum Coherence Phenomena in Photoelectrochemical Energy Conversion Devices	PE8
PASCUAL	Jose Ignacio	Centro de Investigación Cooperativa en Nanociencias - CIC nanoGUNE	CIC nanoGUNE	ES	CONSPIRA	Coherent control of spin chains in graphene nanostructures	PE4
KARPPINEN	Maarit	Aalto-yliopisto	Aalto University	FI	UniEn-MLD	Unique ALD/MLD-Enabled Material Functions	PE11

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LASSAS	Matti Juhani	Helsingin yliopisto	University of Helsinki	FI	PDE-INVERSE	Geometric Methods in Inverse Problems for Partial Differential Equations	PE1
ADAMO	Carlo	Ecole Nationale Supérieure de Chimie de Paris	Chimie Paris Tech - PSL	FR	MaMa	In-silico Models for the Design of Mechanochromic Functionalized Polymers	PE4
ANANTHARAMAN	Nalini	Université de Strasbourg	University of Strasbourg	FR	InSpeGMos	Integrating Spectral and Geometric data on Moduli Space	PE1
BAIGL	Damien	Ecole Normale Supérieure	ENS	FR	DREAM	DNA-encoded REconfigurable and Active Matter	PE5
BONY	Sandrine	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	MAESTRO	Mesoscale organisation of tropical convection	PE10
BOURISSOU	Didier	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	Gold-Redox	Pushing Gold beyond its common redox states	PE5
BURQ	Nicolas	Université Paris-Saclay	University Paris-Saclay	FR	GEOEDP	Geometry, Control and Genericity for Partial Differential Equations	PE1
COUSSOT	Philippe	Université Gustave Eiffel	University Gustave Eiffel	FR	PHYSBIOMAT	From fiber to wall: PHYSical approach of hygrothermal transfers in BIO-based construction MATerials	PE8
DAVAILLE	Anne	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	SOFT-PLANET	Convection and transfers in a textured partially-molten planet from the magma ocean stage to present-day solid-state convection	PE10
FEVE	Gwendal	Sorbonne Université	Sorbonne University	FR	ASTEC	Anyon Statistics in Tiny Electronic Colliders	PE3
LALANNE	Philippe	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	UNSEEN	Nanostructure-Based Design of Visual Perception using High-Index Disordered Metasurface Physics	PE11
LAURAT	Julien	Sorbonne Université	Sorbonne University	FR	NanoAtom	Quantum Optical Physics with Neutral-Atom Waveguide-QED	PE2
LEPETIT	Vincent	Ecole Nationale des Ponts et Chaussées	Ecole Nationale des Ponts et Chaussées	FR	explorer	Exploration of Unknown Environments for Digital Twins	PE6
MARRIS-MORINI	Delphine	Université Paris-Saclay	University Paris-Saclay	FR	Electrophot	Electro-optic frequency comb generation in the mid-infrared.	PE7

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MAURY	Anaelle	Commissariat à l'énergie atomique et aux énergies alternatives	French Alternative Energies and Atomic Energy Commission (CEA)	FR	PEBBLES	Exploring the pristine conditions for transforming interstellar dust into planetesimals	PE9
MOREIRA	Manuel	Université d'Orléans	University of Orleans	FR	APATE	A Primitive solar Atmosphere around The young Earth?	PE10
POULIN	Philippe	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	Perla	Percolation and conductivity in fluids containing rod-like particles	PE3
POULIQUEN	Olivier	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	CohPa	Cohesion in Particulate media	PE3
SCHULLER	Thierry	Université Toulouse III Paul Sabatier	University Toulouse, Paul Sabatier	FR	SELECT-H	SafE and reliabLE COmbustion Technologies powered by Hydrogen	PE8
VIGIER	Nathalie	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	SeaLi2Bio	Biological Isotopy of Lithium in Littoral Zones	PE10
VIVIEN	Laurent	Centre National de la Recherche Scientifique (CNRS)	National Center for Scientific Research (CNRS)	FR	CRYPTONIT	Crystalline Oxides Platform for Hybrid Silicon Photonics	PE7
APPLEBAUM	Benny	Tel Aviv University	Tel Aviv University	IL	NFITSC	New Frontiers in Information-Theoretic Secure Computation	PE6
ILANI	Shahal	Weizmann Institute of Science	Weizmann Institute of Science	IL	QTM	The Quantum Twisting Microscope - revolutionizing quantum matter imaging	PE3
ORON	Dan	Weizmann Institute of Science	Weizmann Institute of Science	IL	BoX-BOOM	Biomimetic eXtremely-Birefringent Organic Optical Materials and devices	PE11
ROTHSCHILD	Avner	Technion - Israel Institute of Technology	Technion - Israel Institute of Technology	IL	H2Bro	Continuous electrolytic-catalytic decoupled water electrolysis for green hydrogen production	PE11
SHARON	Michal	Weizmann Institute of Science	Weizmann Institute of Science	IL	SystemDirectMS	A Native Mass Spectrometry Systemic View of Cellular Structural Biology	PE4
ZELDOV	Eli	Weizmann Institute of Science	Weizmann Institute of Science	IL	MoireMultiProbe	Scanning multi-modality microscopy of moiré quantum matter	PE3

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BERTO	Filippo	Università degli Studi di Trento	University of Trento	IT	ButterFly	Data-Driven Bioinspired Design of Fatigue Super-Resistant Structures: learning by Nature and Flying into the future	PE8
CHERGUI	Majed	Elettra Sincrotrone Trieste	Elettra Sincrotrone Trieste	IT	CHIRAX	X-ray spectroscopy of molecular chirality in solutions	PE4
MANNA	Liberato	Fondazione Istituto Italiano di Tecnologia	Italian Institute of Technology	IT	NEHA	Nanoscale Epitaxial Heterostructures Involving Metal Halides	PE5
MORBIDELLI	Massimo	Politecnico di Milano	Polytechnic of Milan	IT	CoDiBio	Continuous Digitalized Processes for Producing Biopharmaceuticals	PE8
NEEMAN	Amnon	Università degli Studi di Milano	University of Milan	IT	TriCatApp	Triangulated categories and their applications, chiefly to algebraic geometry	PE1
BRUNSVELD	Luc	Technische Universiteit Eindhoven	Eindhoven University of Technology	NL	PPI-Glue	Stabilization of Protein Protein Interactions; transforming molecular glue discovery from art into science	PE5
DOEMLING	Alexander	Rijksuniversiteit Groningen	University of Groningen	NL	AMADEUS	Automated, miniaturized and accelerated drug discovery	PE8
FRATERNALI	Filippo	Rijksuniversiteit Groningen	University of Groningen	NL	FLOWS	Gas flows in and out of galaxies: solving the cosmic baryon cycle	PE9
HESSELS	Jason	Nederlandse Wetenschappelijk Onderzoek Instituten	Dutch Scientific Research Institutes (NWO-I)	NL	EuroFlash	EuroFlash: exploring the origins of fast radio bursts using a network of European radio telescopes	PE9
JONKER	Peter	Radboud Universiteit	Radboud University	NL	Starstruck	A double-edged sword: extra-galactic Fast X-ray Transients	PE9
LOHSE	Detlef	Universiteit Twente	University of Twente	NL	MultiMelt	Melting and dissolution across scales in multicomponent systems	PE8
HOCK	Regine	Universitetet i Oslo	University of Oslo	NO	GLACMASS	Past and Future High-resolution Global Glacier Mass Changes	PE10
GRYKO	Daniel	Instytut Chemii Organicznej Polskiej Akademii Nauk	Institute of Organic Chemistry - Polish Academy of Sciences	PL	ARCHIMEDES	Approaching 20% emission efficiency in the NIR-II region with radical chromophores	PE5

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LINSE	Sara	Lunds universitet	Lund University	SE	CHAPLIN	Chaperone action - a thermodynamic view	PE4
AGGARWAL	Varinder	University of Bristol	University of Bristol	UK	COOLIES	Conformation, Automation and Applications of Polyborons in Synthesis	PE5
DAVIS	Anthony	University of Bristol	University of Bristol	UK	POSTGLUHUT	After GluHUT – A New Era for Synthetic Carbohydrate Receptors	PE5
FACCIO	Daniele	University of Glasgow	University of Glasgow	UK	BioBosons	Boson Sampling and Quantum Imaging for Complex Biological Systems	PE7
FRANGI	Alex	University of Leeds	University of Leeds	UK	INSILICO	Hybrid Machine Learning for Virtual Chimaeras and In-Silico Trials: Cardiovascular Device Innovation & Regulatory Science	PE6
GERARDOT	Brian	Heriot-Watt University	Heriot-Watt University	UK	2D-Gecko	Gecko inspired autonomous fabrication of programmable two-dimensional quantum materials	PE11
HANSEN	D Flemming	University College London	University College London	UK	DeepNMR	Unleashing the full potential of NMR spectroscopy with artificial intelligence and deep learning	PE4
KORHONEN	Anna	University of Cambridge	University of Cambridge	UK	EQUATE	Towards Globally Equitable Language Technologies	PE6
MURRAY-SMITH	Roderick	University of Glasgow	University of Glasgow	UK	DIFAI	Designing Interaction Freedom via Active Inference	PE6
NICKL	Richard	University of Cambridge	University of Cambridge	UK	SANIP	Statistical aspects of non-linear inverse problems	PE1
SEWELL	Peter	University of Cambridge	University of Cambridge	UK	SAFER	Secure Foundations: Verified Systems Software Above Full-Scale Integrated Semantics	PE6
STEVENS	Molly	Imperial College of Science, Technology and Medicine	Imperial College of Science, Technology and Medicine	UK	bioSense	Bioinspired Multiplexed Ultrasensitive Biosensing	PE11