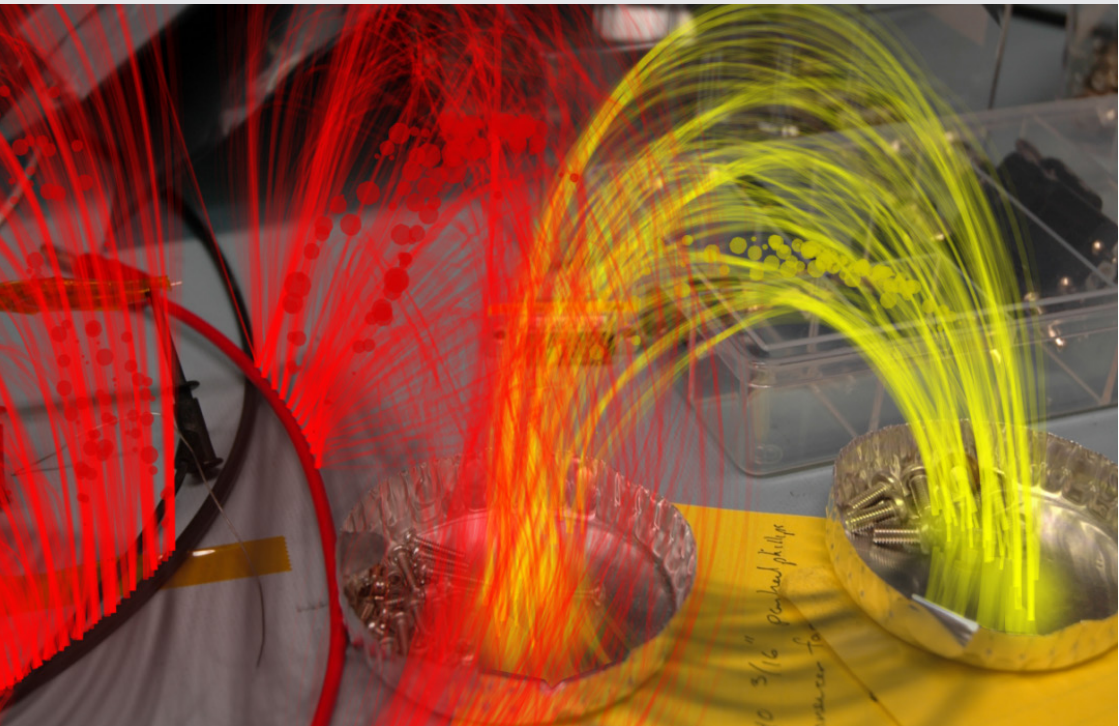
The Future and Emerging Art and Technologies project (FEAT) partners some of Europe's most innovative scientists with artists working at the cutting edge of technology. The goal? To create a productive atmosphere where both parties can learn from one another. Over the nine-month residency period, participating artists will learn new skills and work with novel materials while the scientists gain new perspectives and learn new ways to bring their work to the public.

FEAT

Future and Emerging Art and Technologies



Špela Petrič, Miha Turšič

Miha Turšič is a former product designer who has spent the past decade working on space culturalization, designing zero-gravity dwellings and making postgravity art. Currently, he is collaborating with ESA on the concept of the Moonvillage.

Špela Petrič has formal education in both in new media art and the field of natural sciences. With her artistic research, Petrič produces pieces referencing humanities and arts while working towards an egalitarian and critical discourse between the professional and public spheres.

"Our artistic research will aim at understanding the hidden underpinnings of supercomputing - its power, algorithmic reality, computational bio-politics - to reveal the viscerality of the seemingly abstract processes."

Exascale Computing

The supercomputing community worldwide has set itself the challenge to build, by the end of the decade, a supercomputer that can achieve 'the Exascale'. That is, a million, million, million calculations every second. A consortium of FET projects collaborate on key areas, such as: hardware design, programming models, algorithms & tools, and applications. A crucial target is to address key challenges for the Exascale, including energy efficiency, usability, programmability, and ability to handle data, with the overarching goal of fulfilling grand-challenge science endeavours in areas such as sustainable energy, climate change, and revealing the beginnings of the Universe.

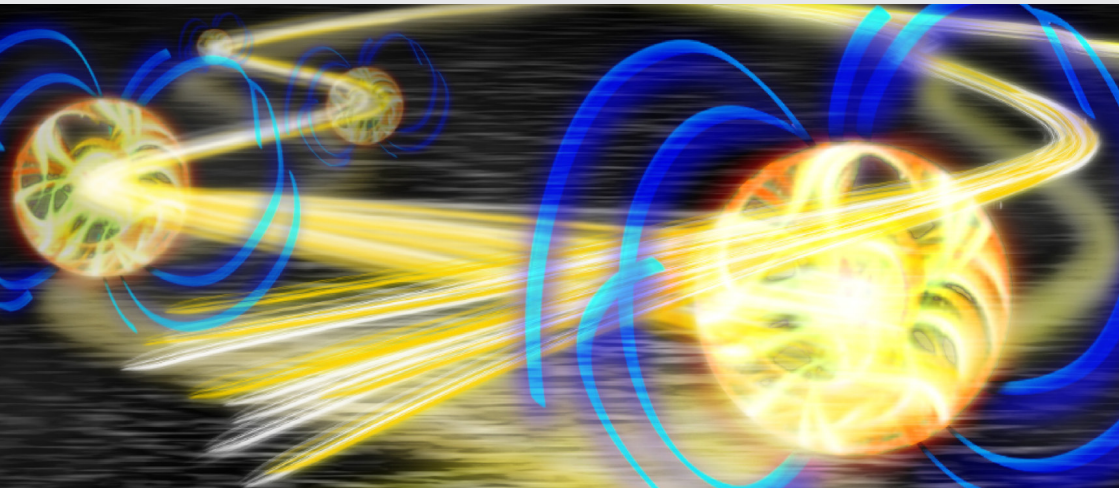
Evelina Domnitch, Dmitry Gelfand

Evelina Domnitch and Dmitry Gelfand create sensory immersion environments that merge physics, chemistry and computer science with uncanny philosophical practices. Current findings, particularly regarding wave phenomena, are employed by the artists to investigate questions of perception and perpetuity. Such investigations are salient because the scientific picture of the world, which serves as the basis for contemporary thought, still cannot encompass the unrecordable workings of consciousness. Domnitch and Gelfand's installations exist as ever-transforming phenomena offered for observation. Because these rarely seen phenomena take place directly in front of the observer without being intermediated, they often serve to vastly extend the observer's sensory envelope. The immediacy of this experience allows the observer to transcend the illusory distinction between scientific discovery and perceptual expansion.

"Developed in collaboration with RySQ, Quantum Lattice will be an art installation exploring the subtle interactions between coherent light, electrodynamically trapped ions, and nearly negligible gravitational forces."

RySQ - Rydberg Quantum Simulators

Quantum Simulators provide new levels of understanding of equilibrium and out-of-equilibrium properties of many-body quantum systems, one of the most challenging problems in physics. The RySQ project will use Rydberg atoms for quantum simulations, as their outstanding versatility will allow to perform a great variety of useful quantum simulations, by exploiting different aspects of the same experimental and theoretical tools. By implementing not only one but a whole family of Rydberg Quantum Simulators, the project will address both the coherent and incoherent dissipative dynamics of many-body quantum systems, with potential applications in the understanding and design of artificial light harvesting systems, large quantum systems with controlled decoherence, and novel materials. RySQ plans to develop a collection of novel experimental and theoretical tools for Rydberg quantum simulators, and to use them as a basis for implementing many important applications of quantum simulations.



Pinar Yoldas

Deeply rooted in biological sciences and digital technologies research, Yoldas' creative work takes many forms: architectural installations, kinetic sculpture, sound, video, and drawing. An internationally exhibiting artist, Yoldas is a PhD candidate at Duke University's Center for Cognitive Neuroscience and Media Arts and Sciences. She holds three masters degrees—a Master of Arts from Bilgi University in Turkey; a Master of Science from Istanbul Technical University; and a Master of Fine Arts from University of California, Los Angeles, where she worked at the Art|Sci Center and the UCLA Game lab.

"Given my interest in the larger cultural and ecological implications of this project, as an artist and designer, it is my goal to bring an affective dimension to the project, by means of artistic production, through which the public can engage in the project in ways unforeseen by the scientific team of DIACAT. I envision an installation, which utilizes the material qualities of the artificial diamond, in thin layers, or wafers, that is arranged so that the aesthetic experience is akin to the experience of being in a garden or an orchard."

DIACAT

DIACAT is a research project that aims to develop a completely new technology for the direct photo catalytic conversion of CO_2 into fine chemicals and fuels using visible light. The approach utilises the unique characteristics of man-made diamond, now widely available at low economic cost, to generate solvated electrons upon light irradiation in solutions (e.g. in water and ionic liquids).

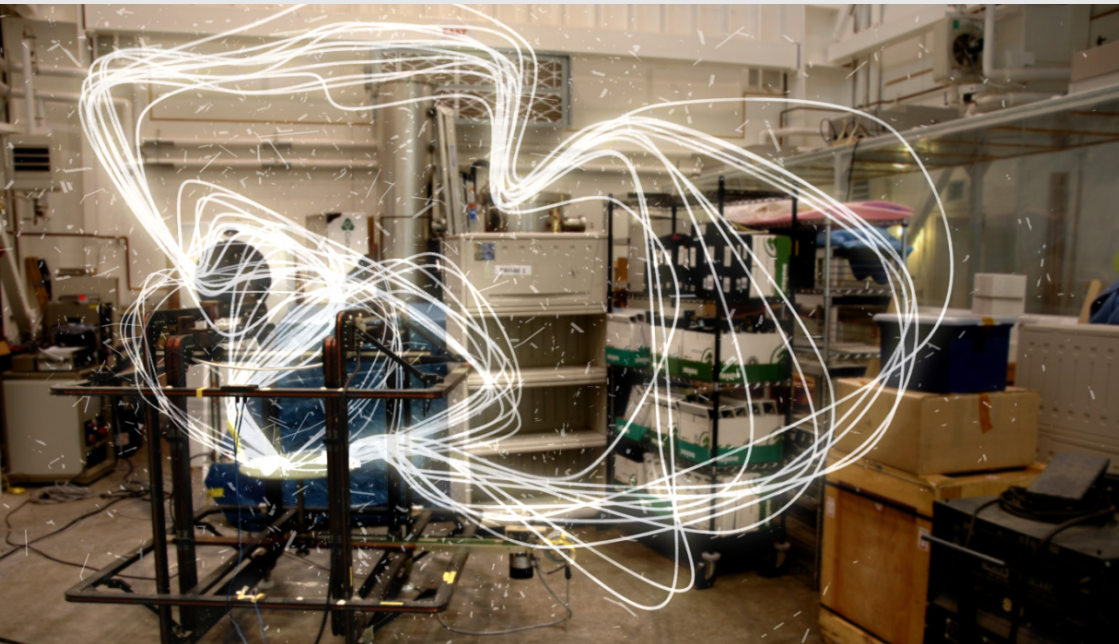
Semiconductor (Ruth Jarman & Joe Gerhardt)

Semiconductor is UK artist duo Ruth Jarman and Joe Gerhardt. In their artworks, they explore the material nature of our world and how we experience it through the lens of science and technology, questioning how they mediate our experiences.

"QuProcs provides us with some interesting initial research questions to do with the fuzzy properties of the quantum world and how they align with our classical world experiences. We will be looking at the methodologies and logistics QuProcs are proposing to harness and control quantum matter without affecting how it behaves, and philosophies around man as an observer of this intangible world."

QuProCS – Quantum Probes for Complex Systems

QuProCS is a consortium of seven different institutions that theoretically and experimentally researches quantum optics and many-body physics. Its goal is to develop a new radical approach to probe complex quantum systems for quantum simulations, based on both quantification and optimization of extractable information.



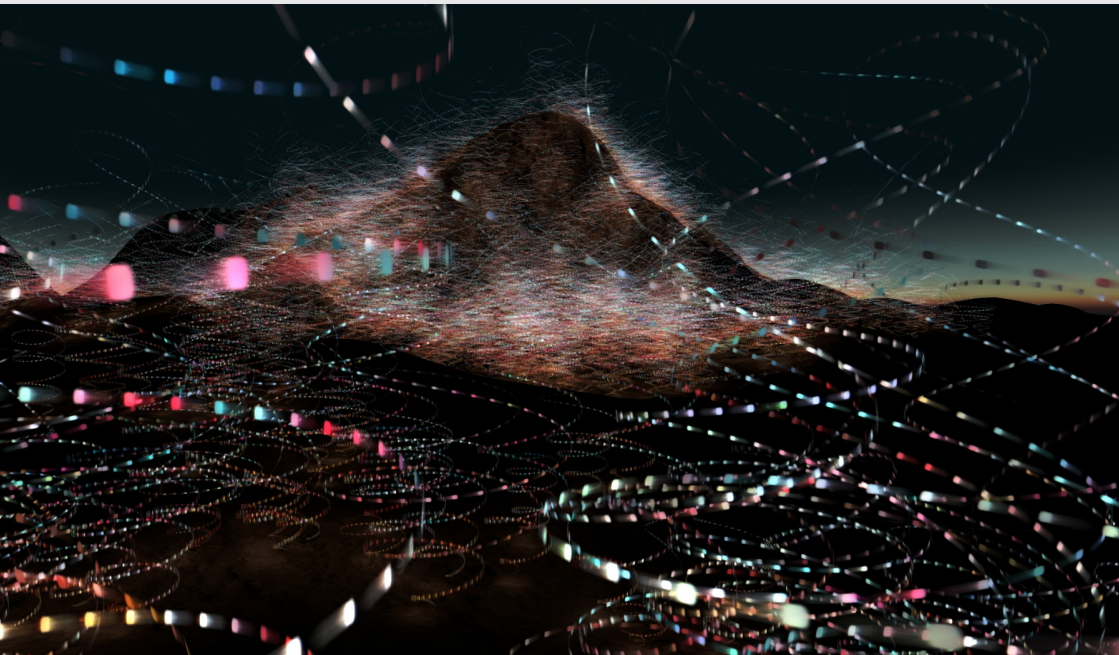
boredomresearch

boredomresearch is a collaboration between British artists Vicky Isley and Paul Smith, internationally renowned for creating artworks exploring extended time frames. boredomresearch have a deep and long lasting fascination with the mechanics of the natural world, which they explore using contemporary technology. boredomresearch's work opens channels for meaningful dialogue and engagement between public and scientific domains.

"Do we need to liberate existing technological paradigms from their industrial origins and unite the domains of nature, science, technology and society? boredomresearch are keen to gain insights from subCULTron's bio-inspired robotics, considering their relevance in an increasingly destabilised natural world."

subCULTron

subCULTron aims for achieving long-term autonomy in a learning, self-regulating, self-sustaining underwater society/culture of robots in a high-impact application area: the Venice lagoon, Italy. The project works with novel sensors (electric sense/electro-communication), novel bio-inspired algorithms (underwater hives) and novel energy harvesting in underwater scenarios to understand influences between sub-marine dynamics and that of the human culture living above it.



Anna Dumitriu

Anna Dumitriu's work fuses craft, technology and bioscience to explore our relationship to the microbial world, biomedicine and technology. She has a strong international exhibition profile and has worked extensively with bacteria as an artistic medium as well developing projects with whole genome sequencing and synthetic biology. By embedding herself in the research being undertaken by MRG Grammar, Dumitriu will build on her existing knowledge and learn about how gene expression is regulated. She will shadow researchers, work hands-on in the lab and develop a new body of high impact artworks that explore and communicate MRG-Grammar's research an accessible way.

"MRG-Grammar will enable me explore the artistic and scientific possibilities of affecting gene regulation and enable me to affect the behaviour of organisms such as bacteria in a far more holistic way rather than simply chopping out and adding in genes that may lead to unforeseen effects."

MRG Grammar

MRG-Grammar develops a new strategy for deciphering the regulatory rules of gene regulation using Synthetic Biology, DNA synthesis technologies and high-throughput analysis to generate new types of biological datasets that systematically explore all possible regulatory landscapes. The project will employ its strategy on diverse model organisms from the tree of life from single cell to whole organism: bacteria, yeast, mouse ex-vivo cells, human cell-lines and finally, whole D. melanogaster and mouse embryos. It is expected to lead to a profoundly deeper understanding of the origins of many diseases. The project will also produce models that will serve as a reference in designing and implementing accurate and more controllable synthetic biology devices, with applications in fuel production, healthcare and other industrial fields.

FEAT partners some of Europe's most innovative scientists with artists working at the cutting edge of technology, to create a productive atmosphere where participating artists will learn new skills and work with novel materials while scientists gain new perspectives and learn new ways to make their work public.

feat-art.eu

youris.com
EUROPEAN RESEARCH MEDIA CENTER

eu|te|ma
TECHNOLOGY MANAGEMENT

waag society

FEAT is part of the European Union Horizon 2020 EU programme FETOPEN-CSA-FETTAKEUP-2015 under grant agreement nr. 686527.