Project title	A new COlloidal cybernetIc sysTem tOwaRds 2030		
Project acronym	COgITOR		
Project number	964388		
Call	FET Open – Novel ideas for radically new Technologies	**Call ID**	2020-FETOPEN-2018-2019-2020-01
Topic	FET-Open Challenging Current Thinking	**Topic ID**	FETOPEN-01-2018-2019-2020
Funding scheme	Research and Innovation Action		
Project start date	01/06/2021	**Duration**	54 months

EVENTS LIST, M19- M42

Work package	Wp6
Responsible Author(s)	CTECH, IIT
Contributor(s)	ALL

Dissemination level

Please select only one option according to the GA			
☒	PU: Public	☐	PP: Restricted to other program participants
☐	RE: Restricted to a group specified by the consortium	☐	CO: Confidential, only for members of the consortium

This project has received funding from the European Union's Horizon 2020 research and innovation programme

Events lists, organized and attended

EVENTS: COgITOR project partners took part in many relevant events in line with the project scope. Below a list of key participation in these events is reported:

- COgITOR was showcased at **ECOMONDO 2024 (November 2024),** The Green Technology EXPO event is a significant platform for showcasing and discussing advancements in industrial technologies and sustainable practices, taking place in Italy every year. In this framework, the COgITOR project was featured at the CiaoTech booth and attracted numerous stakeholders during visits interested in knowing more about the innovative cybernetic systems implemented by the project partners
- Dr. Qing Chen from Empa also presented at the **Materials Research Society Spring Meeting 2024 in Seattle, United States**, on **April 23rd the** talk "The Design, Fabrication and Structural Modeling of Biomimetic Soft Materials for Robotic Applications" as JMR Distinguished Invited Speaker. The status "JMR Distinguished Invited Speaker" has been awarded to only 11 out of the ~ 3'500 attendees of the MRS Spring Meeting 2024. It is worthwhile to mention – that Empa's Dr. Qing Chen is the only non-Professor out of these 11 high profile researchers. For a postdoc, this is a noteworthy award and accomplishment. In 2024 she assumed an Associate Professor position in PR China.
- **In February 2024,** COgITOR was selected to take part in the 1st phase of the Programme – Tech Demo Day on Engineering, promoted by the EIC Venture Building team. IIT joined the exploration workshop with a 5-minute presentation about the electrically programmable liquid state in-memory computer by Chiolerio Alessandro and Marco Crepaldi, featuring its incredible properties of continuum computing, resilience to electrostatic discharge and leakage, and artificial intelligence applications. At the end of the pitch evaluation, per decision of the EIC Programme Manager and the Venture Building team, the project COgITOR has been indicated/suggested to take part of the **EIC T2M Entrepreneurship Programme**.
- Empa delivered an invited talk at the **Materials Research Society Spring Meeting 2024 conference (Seattle, USA)**, the **87th Annual Meeting of the DPG and DPG Spring Meeting 2024** of the Condensed Matter Section (Berlin), **Euromech Colloquium 636** (Besancon, France), and contributed to the Oral Presentation at the **ACS Fall Meeting 2023** (San Francisco)

- **EPFL** joined the **Micro and Nano- Heat and Mass Transfer,** UK, and the **Photonic Day EPFL 2024** , in Lausanne

- **Ecomondo 2023 with CiaoTech:** The Green Technology EXPO event is a significant platform for showcasing and discussing advancements in industrial technologies and sustainable practices, taking place in Italy every year. The 26th edition marked a long-standing tradition of bringing together innovation and discussions in the field of circular economy, industrial technologies and environmental new processes. In this framework, the COgITOR project was featured at the CiaoTech booth and attracted numerous stakeholders during visits interested in knowing more about the innovative cybernetic systems implemented by the project partners

This project has received funding from the European Union's Horizon 2020 research and innovation programme

- **Seminar Talk, Empa, July 2023**: On July 19th, Empa hosted Prof. Michael Dickey from North Carolina State University, for the invited seminar talk on "Shaping a Soft Future". It was a captivating encounter with the fascinating world of cutting-edge research and innovation that left everyone in awe!

- IIT joined a pitch event, **'NEXT'** project proposal submission and presentation, in May 2023. in Hannover (Germany). A new project idea was developed, which is a futuristic potential extension of the COgITOR project. IIT prepared the proposal for this project and submitted to the 'NEXT- Neuromorphic computing' (https://www.volkswagenstiftung.de/en/funding/funding-offer/next-neuromorphic-computing) initiative, of the Volkswagen Foundation during mid-February. This funding initiative (funded by the Volkswagen foundation) aims at fostering collaboration and networking between scientists from the diverse research areas engaged in the field of 'Neuromorphic computing' and other recent approaches beyond the mainstream von Neumann architecture.

- Moreover, **IIT participated in the following events**: 3rd International Conference on Functional Materials & Chemical Engineering, Dubai-UAE; 2nd International Conference on Physics and its Applications , Los Angeles-USA; ISN2A 2024 – VIth International Caparica Symposium on Nanoparticles / Nanomaterials and Applications, Portugal; Bioinspiration, biomimetics, and bioreplication XIV – USA; Title Autonomous Liquid Systems for Space Exploration , Bristol, UK; IMEM – CNR (seminar) , Parma, Italy; IC – ANMBES 2024 , Romania; Alternative Computing Architectures , Bonn, Germany; ISN2A 2024 – VIth International Caparica Symposium on Nanoparticles / Nanomaterials and Applications , Portugal

Events organization: below we provide a list of the events organized by COgITOR consortium not only to boost the project visibility, but also to engage the scientific community, selected stakeholders and policy makers with the project main technical results and progress.

- **The "COgITOR readings" WORKSHOP, October 31st / November 1st 2024, Nizza Monferrato (Asti, Italy).** A workshop was organized to present all the achievements made in the fields of soft robotics and unconventional computing. Results related to liquid computing devices, amorphous memories, neuromorphic systems, and achievements in material science involving materials for energy harvesting, from thermal gradients to self-healing ones, were presented. The beneficiaries of the project, and scientists from all around the world will be involved, including the United States of America, Australia, UK, Germany, Sweden, Italy, Austria, Bulgaria. The workshop represented an extremely rich and dense event. Of course, all such information was distributed between the scientific community. But as partners believe in open science practices, iot was also decided to share such information with a broader audience. Therefore, all materials were made available to anybody interested in seeing how the technology of the future could look like.

This project has received funding from the European Union's Horizon 2020 research and innovation programme

- **“Advances in Unconventional Computing” workshop October 2023,** the COgITOR project orchestrated a workshop titled “Advances in Unconventional Computing,” hosted in-person in Bristol. This collaborative event served as a platform for presenting, discussing, and analyzing breakthroughs in colloid computing within the broader context of novel and emerging computing systems. The diverse spectrum of topics included thermal proteins, fungi, memristors, and enzymatic computers. Through this workshop, participants explored colloidal cybernetics, unveiling its remarkable potential across various scientific and technological domains. The workshop not only highlighted the accomplishments within colloid computing but also fostered an insightful comparison with other unconventional computing paradigms. The workshop’s comprehensive examination of these innovative computing systems underscored their collective significance, paving the way for future advancements and interdisciplinary collaborations in the realm of unconventional computing. The workshop was accompanied by public talks, held in an Art Gallery (The Island, Bristol). The public talks were further enhanced by art exhibits depicting colloidal cybernetic systems, produced by IIT and Empa, as well as a demonstration of the prototype of liquid in-memory computing realized by IIT in collaboration with UWE, that visitors could see while computing.
- Empa Co-PI Artur Braun organized with Minkyu Kim from Univ. of Arizona, Danielle Mai from Stanford University, and Newaye Medhin from Addis Ababa University (Ethiopia) the **Symposium SB11 "Bio-based and Biomimetic Polymers in Soft Robotics" at the Materials Research Society Spring Meeting 2024 in Seattle,** 10.5281/zenodo.10719584**.**
- Empa organized an **International Seminar Talk on "Shaping a Soft Future"**, COgITOR partner Empa hosted Bio Soft Matter Professor Michael F. Dickey from North Carolina State University, July 2023.

This project has received funding from the European Union’s Horizon 2020 research and innovation programme