



We cordially invite you to participate in the short online workshop on Ex-Ante Life Cycle Assessment (LCA) of Emerging Technologies.

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The Workshop is jointly organized by UASABI INOVEYSHANS EOOD and TU DRESDEN, and conducted by UNIVERSITEIT LEIDEN (Institute of Environmental Sciences- CML), as part of the Dissemination Actions in the EIC- FET OPEN Project PROGENY: Grant agreement ID: 899205.

### Proto-Opto-Electro-Mechanical Hybrid Systems for Generation-Next Bionic Devices

#### The Problem:

The 21st century has seen an unprecedented proliferation of electronic devices, sharply altering the world economic map and human sociological behavior, while creating socioeconomic and environmental burdens in form of massive electronic wastes. Not only does e-waste contain hazardous amounts of toxic substances such as lead, cadmium, mercury, polychlorinated biphenyls, and brominated flame-retardants, but its informal disposal and low technology recycling generates additional toxic pollutants, and heavy metals. Clearly, the electronic industry is indispensable but unsustainable, demanding immediate sustainable innovations – both in materials and in device design.



#### *Our Offered Solution through Responsible Research and Innovation:*

*Within a century of fascinating progress in electronics, viable proton-based devices are yet to be developed, although nature has given us efficient and intrinsically sustainable biological systems that are fundamentally protonic.*

*Taking a cue from recent advances in organic electronic and protonic devices, we target a radical, foundational and sustainable breakthrough in device & sensor innovation, using designer soap films.*

