

18.12.2021 – 28.08.2022, ZKM Atria 8+9, Ground Floor

BioMedia Press Kit

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Digital Exhibition Opening

Visitors can visit the exhibition for free on Saturday, 18.12.2021 and Sunday, 19.12.2021. An official opening event in physical space will not take place due to the high Corona incidence numbers. Digitally, the opening speech of the entity and a performance of the AI can be followed on Saturday evening in the ZKM Livestream at zkm.de/en/livestream.

Program

6pm CEST | Welcome by an entity

6.15 pm CEST | Performance of *Fantasy #4* by Quadrature and Christian Losert

The exhibition will be accompanied by the opening of the *Digiloglounge*, the exhibition and discussion platform of the research network *digilog@bw. Digitization in Dialog*.

About the exhibition

BioMedia. The Age of Media with Life-like Behavior

18.12.2021 – 28.08.2022, ZKM Atria 8+9, Ground Floor

Digital Opening: Saturday, 18.12.2021, 6 pm CEST at zkm.de/en/livestream

What happens when an artificial intelligence learns from living cucumber plants? Why do robots form a swarm when a human passes by? What is it like living with the extinct Kaua'i 'ō'ō bird? Who or what defines what is alive today now that intelligence and empathy are no longer the exclusive preserve of humans? The *BioMedia* exhibition is an invitation to learn about and discuss possible forms of coexistence between (non)human and artificial

November 2021

Press kit for the exhibition *BioMedia*

Exhibition opening

Sat, 18.12.2021, 6 pm CEST

Duration of the exhibition

Sat, 18.12.21–Sun, 28.08.22

Press conference

Wed, 15.12.2012, 11 am CEST

Location

Atria 8+9, Ground Floor

Individual press appointments

Registration via presse@zkm.de

Web presence

zkm.de/biomedien

Press contact

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organisms visionarily worked out by about 60 artists.

For centuries, humans have attempted to simulate life through the movements of machines. In the twenty-first century, digital techniques and artificial intelligence have expanded these possibilities. The generation and storage of digital images enables image content to be immensely variable, and makes media systems behave more and more like natural organisms. "BioMedia" are emerging that will shape the twenty-first century. This exhibition provides a glimpse of these developments and seeks new concepts and definitions of life – all the more timely in light of the existential threats to life on our planet.

At a time of existential threat to our planet, the search for new concepts and definitions of life is not just a philosophical endeavor; it is now a responsibility to life itself. New methods and ideologies need to be explored to approach the question of how life can be sustained in a community of (non-)human and technological entities – especially against the backdrop of the profound ecological crisis, mass extinctions, and the human-made climate catastrophe.

"The nineteenth century was the century of motion machines, and the twentieth century was the era of motion media. The twenty-first century will be the era of biomimetic media that exhibit lifelike behavior. The exhibition *BioMedia. The Age of Media with Life-like Behavior* provides a first glimpse of what is to come." – Peter Weibel, Artistic Director of ZKM.

In addition to motion, media systems simulate a variety of aspects of life, from intelligence to the empathy of living organisms. It is the media that exhibit lifelike behaviors that we call BioMedia or biomimetic media.

The exhibition explores different forms of artificial agents and environments as well as their behaviors and interactions with other entities within hybrid ecosystems. Some are digital, computer-generated and computer-simulated systems that evolve on a screen, while others are complex adaptive robots that are physically present in space and exhibit biomimetic behavior such as search mechanisms, swarm intelligence, self-preservation, and so on. Through unpredictable responses to stimuli, they mimic, demonstrate, and simulate lifelike behavior.

The entities on display raise fundamental questions about the self-preservation of inorganic life for they demonstrate their ability to interact with each other and with human and nonhuman beings through two-dimensional images, three-dimensional objects, and multi-dimensional quantum models. It is dynamic systems such as these at the intersection of art and science that are explored in the exhibition – both in terms of

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their potential real-life applications and their ability to open up new perspectives on urgent contemporary issues.

BioMedia provides insights into possible forms of coexistence between organic and inorganic life forms. Thereby the existence of organic life and artificial entities are not mutually exclusive. Rather than thinking only in terms of competing or mutually exclusive concepts, the *BioMedia* exhibition proposes imagining relationships with artificial agents as mutual dependencies and involvements.

Continuing a biophilic approach that recognizes the diversity of life on our planet, *BioMedia* also proposes that not only carbon-based life but also inorganic life forms should be included in ecological and social networks. The exhibition also challenges the taxonomies developed by the natural sciences and the compartmentalization of different branches of science and art. The sympoetic community of the future will welcome artificial entities as an integral part of a system of networks, relationships, and connections between different disciplines in order to address urgent problems and advance new solutions. In such a community, artificial entities may take on the role of mediators, regulators, designers, attenders, or supervisors.

Who or what defines or decides what is alive and what is intelligent? Are we merely projecting our own behavior and mindset onto inorganic forms? How do humans and artificial agents coexist today — and how will it develop in the future? Can artificial life forms be empathetic? What ethical questions must be asked in the age of BioMedia? How can we prevent artificial life-forms from reproducing human biases? How can the design and development of technologies be conceived to be more participatory? These are precisely the questions that the exhibition *BioMedia. The Age of Media with Life-like Behavior* addresses.

Curatorial Team

Peter Weibel with Sarah Donderer and Daria Mille
Curatorial assistance: Beatrice Zaidenberg

Some artworks were realized with the kind support of

AMANN Group, Arducam, Australia Council for the Arts, BTG Elektronik, Bureau des arts plastiques, »Creative Europe« Program of the European Union, EOS GmbH Electro Optical Systems, Espresso, Eurocircuits, European Union, Feco Federle, Federal Government Commissioner for Culture and the Media, Franke GmbH, Institut français Deutschland, »Kultur Digital«, Kulturstiftung des Bundes, Mädler GmbH, »NEUSTART KULTUR« Program sponsored by the Federal Commissioner for Culture and the Media, RIVA Engineering GmbH, Rotacaster, Vitra

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Cooperating partners

CITA – Centre for Information Technology and Architecture at the Royal Danish Academy of Fine Arts (DK)
École polytechnique fédérale de Lausanne (EPFL)
FZI Forschungszentrum Informatik, Karlsruhe
Karlsruher Institut für Technologie (KIT)
Light Art Space (LAS)

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Peter Weibel on the exhibition

Peter Weibel, artistic director of the ZKM Karlsruhe and curator of the exhibition *BioMedia. The Age of Media with Life-like Behavior* discusses it in a conversation that took place in in October 2021

Professor Weibel, how did the idea for an exhibition on dynamic systems in art and science arise?

In 1981 I gave a lecture on biotechnology and art, which was also published and in which I coined the term BioArt. Biocommunication has been one of my fields of research since the emergence of cybernetics (Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine*, 1948).

In what way does your concept of *BioMedia* differ from the definitions of other researchers?

There is a sharp distinction between the term BioMedia and the term BioArt. BioArt deals with the emergence of organic life from organic materials. *BioMedia* deals with representations and imitations of life by technically engineered, inorganic materials. The nineteenth century invented wheel-based motion machines. Thus around 1900, the phenomenon of movement entered art. First as the illusion of movement, in wheel-based cinematography, and then as real movement, kinetics, in the 1950s. In the twentieth century, motion media were perfected as imitations of life. And in the twenty-first century, BioMedia are exhibiting lifelike behavior with physical interactions. Moving image media are becoming animated image media.

So what role is left for human beings?

Humans remain what they have always been: a producer schema. Humankind changes: they expand their capabilities. With the art of BioMedia, Homo sapiens is approaching a new understanding of life, the preservation of life, and sustainability.

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List of artists

Artists: Kees Aafjes, Refik Anadol, Artificial Nature (Haru Ji & Graham Wakefield), Giselle Beiguelman, Torsten Belschner, Samuel Bianchini, Frank Bierlein, Michel Bret, Ludger Brümmer, Daniel Canogar, Aristarkh Chernyshev, CITA – Centre for Information Technology and Architecture at the Royal Danish Academy of Fine Arts, Edmond Couchot, Stephanie Dinkins, Melissa Dubbin & Aaron S. Davidson, Anna Dumitriu, Jake Elwes, Justine Emard, Cécile B. Evans, Bernardo Fontes, Edo Fouilloux, Yves Gellie, Alexandra Daisy Ginsberg, Libby Heaney, Stephan Henrich, Katrin Hochschuh & Adam Donovan, Yannick Hofmann, intelligent.museum, Yasha Jain, Daria Jelonek, Nikolai Konstantinow, Bernd Lintermann, Christian Mio Loclair, Matthew Lutz, Hasan Mashni, Alex May, Bruno Moreschi, Mélodie Mousset, Alessia Nigretti, Gordon Pask, Špela Petrič, Sascha Pohflepp, Nina Rajcic & SensiLab, random international, Anna Ridler, Birk Schmithüsen, Alexander Schubert, Jeffrey Shaw, Maria Smigielska & Pierre Cutellic, Christa Sommerer & Laurent Mignonneau, Karl Sims, Jakob Kudsk Steensen, Martinus Suijkerbuijk, Maija Tammi, Universal Everything, Harm van den Dorpel, Jeroen van der Most, Peter van der Putten, Günter Weseler, Marco Zampella, Moph Zielke, Fabien Zocco.

Research projects

Projects: Beyond Matter, École polytechnique fédérale de Lausanne (EPFL), Festo SE & Co. KG, FZI Research Center for Information Technology, IBM Deutschland GmbH, intelligent.museum, KIT – Karlsruhe Institute of Technology.

Catalogue

It is planned to publish an approx. 300-page publication about the exhibition in English. The book will include several essays introducing the topic, including texts by professors Peter Weibel (curator of the exhibition and artistic director of the ZKM) and Ingeborg Reichle (art, culture, and media scholar at the University of Applied Arts Vienna). The publication will document all works in the exhibition extensively with texts and images.

Satellite and touring exhibition

A satellite exhibition will be on show at **EnBW**'s corporate headquarters in Karlsruhe from approximately beginning of February until July 2022.

An adapted touring version of the *BioMedia* exhibition will be presented at the **Centre des Arts, Enghien-les-Bains**, France, from May 12 to July 10, 2022. This collaboration is within the framework of the UNESCO Creative Cities Network.

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