

Oribotics – Robotics in Full Bloom

Futurelab Exhibits Origami Robotics at the 2010 Ars Electronica Festival

(Linz, September 4, 2010) Meadows are abloom with flowers at the Ars Electronica Futurelab. This colorful garden—interactive, of course—was created in cooperation with Australian origami and media artist Matthew Gardiner and the University of Linz’s new Institute of Polymer Product Engineering. During the 2010 Ars Electronica Festival (September 2-11), they’ll be bringing the industrial architecture of the former tobacco processing plant into full bloom in the form of 50 robotic sculptures.

Origami meets Technology

As the portmanteau name Oribot suggests, these high-tech creatures are the outcome on an artistically motivated synthesis of traditional Japanese paper-folding and state-of-the-art robotics. Oribots unfold their beauty in the truest sense of the word. This latest Ars Electronica project features complexly folded floral structures clasped by flexible plastic cups that open and close at the command of an ultrasonic sensor. The closer a festivalgoer gets to one of the 50 Oribots in the Tabakfabrik, the wider its shiny white fabric blossom opens. This is an interaction concept that is comprehensible by young and old alike; what’s behind it is a highly sophisticated design. All 1,050 folds of a single Oribot blossom are mechanically interlinked. As soon as one single fold of a blossom is activated, all the others go into motion too. Oribotics mastermind Matthew Gardiner—currently artist-in-residence at the Ars Electronica Futurelab—worked for three years developing the ideal folding pattern and material for his latest generation of Oribots. “I’m still fascinated by their extraordinary aesthetic and emotional quality, and I want to get this across to visitors,” said Gardiner, who became infatuated with origami as a schoolboy in Australia and has been active for many years at the nexus of bionics, technology and art. For the Ars Electronica Festival that’s beginning in a few days, he’s also developed another attractive interaction scenario on the macro-level “When an Oribot is activated by an approaching object, the resulting movement impulse is transmitted via a network control system to the other 49 Oribots.” What ensues is a chain reaction of more than 52,000 (un)foldings. The installation visitor beholds a highly complex moving picture, the surreal spectacle of a field of flowers coming to life.

Futurelab meets IPPE

“This work in the area of functional aesthetics shows that the use of seemingly ‘dumb’ materials like the polyester flowers used here can lead to outstanding results in combination with an artistic way of thinking and the creative use of innovative technologies,” said Christopher Lindinger, director of the Research Group at the Ars Electronica Futurelab. But precision in the details is also of tremendous importance, since—just like a human being’s DNA structure—error-free forms and movement sequences on the part of the Oribots depend on even the tiniest folding process functioning properly. This was the reason to bring in the Institute of Polymer Product Engineering (IPPE) that was established at the Johannes Kepler University in autumn 2009. The components of the Oribots’ movable plastic cups were

With queries, please contact

Christopher Ruckerbauer
Tel: +43.732.7272-38
christopher.ruckerbauer@aec.at
www.aec.at/press

produced on site using the IPPE's 3D printer. Institute Director Zoltan Major foresees interesting possibilities for collaboration involving plastic processing technology and media art. After all: "Many producers are able to turn out good, reliable components today. The way of the future is expanding functionalities and adding value through artistic ideas and interventions. And the tremendous flexibility and color characteristics of polymer materials, in turn, yield advantages for creative work. Simply put, this stuff is good to 'play' with."

REPAIR – Ars Electronica Festival 2010

This year's festival for art, technology and society (September 2-11, 2010) is taking the crises of our day and age—ecological depredations, economic meltdown and digital loss of control—as a suitable occasion to call for a co-creative process of "Repair." Once again, Ars Electronica is serving as a proving ground for new ideas and possibilities to take action, for assessing the sustainability of visions and utopias. This is a process in which art and science, design and engineering are participating as equal partners. Matthew Gardiner's Oribots will be one of the most fascinating highlights arrayed about the festival grounds, a former tobacco processing plant that will be hosting the Ars Electronica Festival for the first time this year.

With queries, please contact

Christopher Ruckerbauer
Tel: +43.732.7272-38
christopher.ruckerbauer@aec.at
www.aec.at/press