

A Note from the Editor

A variety of science fiction works from *Star Wars* to *Mad Max* have speculated about the fantastical intermingling of biology and technology. In some cases, this is shown through cyborgs with superhuman abilities, in other cases with hyper-advanced medicine. Either way, the theme of combining the mechanical and organic has been heavily explored in all kinds of works. Recently, as so often happens, science fiction has become a reality and much research has been done in the field of neuromorphic computing—biology-inspired electronics systems that use organic and mechanical materials.

The Purdue Honors College recently facilitated the opportunity to talk to one of the leaders in the field, Dr. Paschalis Gkoupidenis, in a question-and-answer session that discussed the past, present, and future of neuromorphic computing.

Paschalis Gkoupidenis earned his PhD in materials science from NCSR “Demokritos”, Athens, Greece, in 2014. During his PhD, his research focused on ionic transport mechanisms of organic electrolytes, physics of ionic-based devices, and of non-volatile memories. Following his PhD, in 2015 he joined the group of George Malliaras at the Department of Bioelectronics (EMSE, France) as a postdoctoral researcher. At the Department of Bioelectronics, his research focused on the design and development of organic neuromorphic devices based on electrochemical concepts. In 2017, Paschalis Gkoupidenis joined the Max Planck Institute for Polymer Research, and he is currently a Group Leader at the Department of Molecular Electronics.

Dr. Gkoupidenis’s work is especially pertinent in the context of the year 2020, a time when both our global technological and biological infrastructures are being tested to their limits. Further work into the combination of electronic and biological components holds important implications for the future of computing, medicine, and society.

Inside this issue of *Ideas* magazine are a collection of works that provide further context to the field and applications of neuromorphic computing as well as to Dr. Gkoupidenis’s career and schooling.

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