Back to an old passion to start a new venture

MERESPO is an experimental research program that pioneers the development of intelligent polymers whose macroscopic properties change in response to external mechanical forces in a pre-programmed and useful manner.

After serving for about ten years as a professor in the USA, Prof. Christoph Weder returned to Switzerland in 2009. He now leads the Adolphe Merkle Institute at the University of Fribourg, where he established a research group that focuses on the development of functional polymeric (nano)materials.

**An old passion**

Back in 2002, Prof. Weder’s group was among the first to exploit mechanical transduction processes – the conversion of mechanical into chemical events – to create fluorescent polymers which change their emission color when exposed to mechanical stress. The general idea to utilize mechanically induced chemical reactions to trigger pre-programmed events in polymers has attracted widespread interest from researchers around the globe, and “my colleagues took research in this domain in completely new directions” said Prof. Weder.

**A new venture**

This, in turn, inspired him to renew his own programs in the field. “The ERC Advanced Grant has been a wonderful opportunity to re-launch my activities in this domain after returning to Europe” he said. The ERC grant has allowed Prof. Weder to launch a high-risk / high-reward venture on the design of new polymers with unusual and previously unavailable functionalities, such as mechanically induced generation of light, mechanically controlled cell growth, auto-lubricating behavior, and the ability to release small molecules such as drugs, fragrances and antiseptics.

“My research is motivated by the goal to develop novel materials that display unusual properties and are useful.”

**Starting a National Center of competence**

An important feature of the ERC Advanced Grant is that it allows one to appoint a handful of researchers over a period of five years, which permits a significant and sustained program that would otherwise be very difficult to fund. Contrary to the public opinion about European grants, the administrative tasks are actually quite simple. First results from the program have already inspired several new collaborations and some of the break-through findings spurred the work of one module of the new Swiss National Center of Competence in Research Bio-Inspired Materials.
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