**PIEZOELECTRIC NANOGENERATOR DRIVEN BY LIGHT-POWERED MOLECULAR**

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**Abstract: Short description of the presentation topic about 250 to 600 words.**

Our research has focused on the development of nanogenerator-based piezoelectric materials, which have been extensively studied to advance the next generation of autonomous microdevices capable of efficiently harvesting energy from their surroundings. We have successfully created a piezoelectric nanogenerator that can transform light energy into electrical current through the utilization of an improved piezoelectric nanocomposite (P(VDF-TrFE)-BaTiO3) and a photosensitive molecular motor (pseudo-stilbene derivative). This innovative approach offers an alternative to relying solely on external mechanical stress, as the molecular motors are able to capture light and convert it into consistent mechanical stress by inducing geometric changes. These changes lead to a mechanical deformation of the piezo-nanocomposite, ultimately resulting in the generation of an electrical current.

**Biography of Presenter about 100 words:**

Dr. Fouzi Mouffouk is a distinguished faculty member currently affiliated with Kuwait University in Kuwait. He completed his academic journey in chemistry at l'Ecole Nationale Supérieure de Chimie, University de Montpellier II in France, where he earned his doctoral degree in material science in 2001. After completing his doctorate, Dr. Mouffouk pursued a postdoctoral position at North Carolina University, followed by a period at Liverpool University in the United Kingdom. In 2005, he joined the esteemed Los Alamos and Argonne National Laboratory as a senior scientist, making significant contributions to the field. However, his passion for academia led him back to Europe in 2010, where he served as a faculty member at Algarve University in Portugal until 2014. It was in 2014 that Dr. Mouffouk joined Kuwait University once again, this time as a faculty member, bringing his expertise to enrich the academic community. His research interests primarily focus on the design and implementation of self-assembled amphiphilic materials in various areas, including nanomaterials, biosensors, 3D scaffolds for cell culture and tissue engineering, nano photovoltaic/solar cells, and artificial systems such as protocells. Dr. Mouffouk's contributions to the field have been invaluable, and his dedication to advancing scientific knowledge is commendable.

**Name:** Dr. Fouzi Mouffouk.

**Position Title:** Professor Of Chemistry At Kuwait University.

**Education:** PhD In Materials Science. Ecole Nationale Supérieure De Chimie, Montpellier II France.

**Reacher Specialization:** Material Science

* **Please attach a recent high-resolution photograph of the presenting author.**

