

## *A word from our Editor-in-Chief*

### **NONCONVENTIONAL TYPE OF SOLAR PANELS**

*Editor-in-Chief*

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Lately a highly discussed and analysed subject is about designing a type of nonconventional solar panels. I will present a few ideas from the objective reality point of view, ideas that have made me along with a team from Sibiu from Lucian Blaga University to study and start such a research.

It is proposed a type of nonconventional solar panels, which does not have in their structure conventional solar cells, but photo-electrochemical reversible cells functionally organized in planar laminated structures made by coating, as functional electrochemical assemblies by anode-membrane-cathode type, exposed to intermittent natural light, being covered with a transparency and opacity window that succeed each other based on LCD (Liquid Cristal Display) technology using in dark phase, enabled by the opacity of the window, specific reactions at electrodes as electrochemical phenomena that generates electricity, and in brightened phase allowed through transparency of the same window, taking place the reversible photochemical reaction of decomposition of silver halide formed in the previous phase as a return to initial situation.

The active phase is the one produced in the dark in which electricity is generated and passive phase is at light when reactivation of the cell is happening, when the substances of the cell return to its original state. The reactions occur at the electrodes of the cells separated by ion permeable membranes.

As the largest energy resources and as ecological purity, sun and solar radiation can be considered as an ideal and eternal resource. The actual solar energy conversion into electricity with devices manmade have very high manufacturing energy costs, remaining an expensive application. Although semiconductor based solar cells have a relatively high conversion efficiency, price performance ratio is low, because of high manufacturing price.

Although silicon solar cells, being already in circuit current use, are still a research subject, for reducing cost and increasing efficiency.

Inter and multidisciplinary research is necessary to find branches, even nonconventional, for obtaining electricity from solar light energy, to use structures and technologies with a price-performance ratio more convenient. Conveniently not so much by increasing conversion efficiency, as by reducing the manufacturing

cost of photovoltaic devices, using technological materials with much lower energy consumption, by using recovered and recycled materials. It requires the storage of the obtained as impulses energy, in high-capacity capacitors and overflow in passive phases

Here are a few ideas that challenges discussions that seem to never end. We are in the midlle of a research that began in 2009 and which led to interesting results and worthy of consideration in the laboratories of Lucian Blaga University respectively the Faculty of Engineering.