

## Hydroelectric cell path breaking invention for green electricity production by splitting of water -An alternative to solar cell and fuel cell for masses

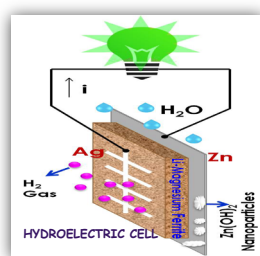
R K Kotnala

CSIR-National Physical Laboratory, India



### Abstract

Revolutionary path breaking invention of the green energy device Hydroelectric Cell, HEC, is an alternative to Solar cell and Fuel Cell for Masses. HEC represents the most versatile green energy solution ever invented. It is an exceptional advancement in the development of green energy sources and it has opened a new frontier area of research. Hydroelectric cell dissociate water molecules into ions at room temperature without using any external energy to generate electricity, which is one of the best options as an eco-friendly and pollution free green energy device invention of 21st century. Sprinkling of a few drops of water on Hydroelectric Cell generates electricity spontaneously without use of any acid/alkali/light on it. Hydroelectric cell working principle is the combination of material science, nanoscience and electrochemistry. Nano porous oxygen deficient metal oxide material used in hydroelectric cell dissociates water molecules into hydronium and hydroxide ions at room temperature, hydroxide ions at Zn anode form nano zinc hydroxide and hydronium ions liberate hydrogen gas on the Ag inert cathode. Nanoparticles of zinc hydroxide and hydrogen gas by-products are formed at electrodes on the metal oxide pellet of the cell. The by-products of HEC are also very useful and non-toxic. Hydroelectric cell (HEC) technology offers safe, clean, low cost and reliable power generation to almost any electrical device.



**Figure 1.** Schematic diagram of Hydroelectric Cell generating electricity by water splitting with byproducts hydrogen gas and zinc hydroxide

### Biography

R K Kotnala is a Fellow NASI and IGU having 35 yrs experience as Scientist is presently Advisor on magnetic measurements on INO project as Raja Ramanna Fellow, one of the highest distinguished honour to a Scientist by the Department of Atomic Energy, at NPL. He is Former Chief Scientist and Head, Environmental Sciences and Biomedical Metrology Division, Materials Engineering and Physics Division, National Physical Laboratory. Research interests are Environment Science, Hydroelectric Cell, Solar Cell, Metrologist, Spintronics, Nano-ferrite and Humidity Sensor. He published over 491 research papers in SCI journals, Physical Review Letters, 101, 2008, PRB, Angewandte Chemie, J Mat Science A etc. Associate Editor: J. Appl Physics (AIP) USA, former and IET Science, Measurement and Technology, London. Hydroelectric Cell Device Inventor 2016: Water Splitting by non-photocatalytic process to generate Green Electricity by Hydroelectric Cell.



5<sup>th</sup> Global Innovators Summit | February 24, 2021

**Citation:** R K Kotnala, Hydroelectric cell path breaking invention for green electricity production by splitting of water -An alternative to solar cell and fuel cell for masses, Innovators 2021, 5<sup>th</sup> Global Innovators Summit, February 24, 2021, Pages 09