








**GENERAL INFORMATION:**

-  CÓRDOBA (ESPAÑA)
-  PRESSURE DROP: 30 METERS
-  FLOW RATE: 3 LITERS/SECOND
-  GENERATED POWER: 320 W
-  SELF-CONSUMPTION BATTERY CHARGING TURBINE

**BACKGROUND**

The Leonardo Da Vinci Building at the University of Córdoba has the Hydraulic Laboratory 2 used for research and teaching. In this laboratory there is a pumping station composed of three 1.5, 2 and 2.5 kW pumps, which are powered by photovoltaic energy. The photovoltaic panels are located on the roof of the building and have a peak power of 10 kW. These pumps can be connected in series and in parallel and are driven by frequency inverters.

**THE SOLUTION**

Thanks to the installation of the turbine, energy is generated from the pressure introduced by the pumps powered by solar energy. The objective is to analyze the use of a PAT (pump as turbine) as a renewable energy source in potable water and irrigation distribution networks. Also, show its operation and possible applications during teaching practices in undergraduate and master's subjects. In addition, the system records all operating data and uploads it to the internet without interruption.