**Abstract:**

Wireless Sensor Networks are becoming a relevant tool for the transformation of a huge variety of scenarios into smart environments, where monitoring actions can be combined with immediate, automatic decisions and prompt actions.  Water management for civil, agricultural and industrial can profit significantly by the use of smart technology, especially when the communication part is realized by means of wireless channels, with no need to transfer the information by cables. Our Lab has designed and put into practice a mobile wireless sensor platform to identify the presence of leakages within aqueduct infrastructures, with better and enhanced precision, and very limited costs. The core of the proposed technology is represented by a mobile sensor, able to navigate inside pipes, detect acoustic signals, associate the acquired information to the presence of water losses, transmit the information to the surface. The device has been baptized WaterMole, and thanks to its characteristics, it minimizes the cost of the identification and maximizes the precision of the localization.