

POSTDOCTORAL POSITION OFFER FORM

1. Job Position title: *Smart precision irrigation systems based on renewable energy sources and sensors*

2. Keywords: *Precision irrigation, Water networks, Renewable energy sources, Life Cycle Assessment*

3. Researcher in charge in DAUCO:

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4. Research Group description (max. 2.000 characters)

The research group “Hydraulics and Irrigation” is part of the Department of Agronomy in the University of Córdoba. Despite being relatively small, the group covers a range of research lines, most of them related to the efficient use of irrigation water. Thus, topics such as the design and efficient management of irrigation water distribution networks, application of ICTs to efficient water management, performance indicators and benchmarking in irrigation, water footprint and optimization of the water and energy nexus are addressed.

In relation to the optimization of the water-energy nexus, various actions are carried out such as promoting the efficient use of water through precision irrigation techniques, the adequate management of distribution networks to reduce their energy dependence and the implementation of renewable energies (photovoltaic solar energy and microhydropower) to reduce the carbon footprint and costs associated with irrigation. Innovative approaches based on modelling techniques, Artificial Intelligence (AI), Big Data and ICTs are used with this aim.

The group is currently developing several projects in these lines and has an important scientific production with between 5 and 10 research papers every year, published most of them in top journals of the first quartile. Thanks to this, the University of Córdoba is included in the Shanghai ranking in the field of water resources."

5. Job position description (max. 2.000 characters)

We are looking for a highly motivated postdoctoral researcher with interests in the application of renewable energy sources for irrigation water supply and in the development of smart irrigation models based on the integration of sensors.

The successful candidate should have a PhD degree in agronomical engineering, agricultural water management or similar. She/he is required to have demonstrated skills and experience in irrigation systems and water distribution network modelling, Life Cycle Assessment (LCA), use of different sensors for precision irrigation and applications of renewable energy sources in irrigation systems/networks. Some skills in modelling hydraulic networks (Epanet) and the Soil-Water-Plant-Atmosphere system are essential for this job position.

Scientific communication (including paper and report writing) and experience of working with stakeholders in water resources management in agriculture will be highly valued. International experience as well as previous participation in multidisciplinary groups would also be highly valued.