



Scientists aim to use power of light to purify water

CIT researchers are involved in a number of projects that aim to harness the power of light for water purification and monitoring applications.

The researchers are based in the college's Centre for Advanced Photonics & Process Analysis (CAPPA).

Among the projects is the recently launched €1.1 million European project, AQUA-PULSE, which brings together a consortium of European SMEs and research institutes to develop an efficient water purification unit using high-power UV light emitting diodes (LEDs).

The project is coordinated by the Cork-based SME company, Epi-Light Ltd, who develop high-brightness LED light sources at specialised wavelengths for life science and industrial markets.

Ultraviolet (UV) irradiation is a common method used to purify water, as direct exposure to UV light can kill many harmful bacteria and viruses. Additionally, a special material called a photocatalyst can use the UV light to break down organic compounds and pollutants in the water.

However, most existing systems use mercury-based lamps as the source of the UV light, which are relatively bulky, inefficient, and have health and environmental issues due to the mercury contained in them.

The AQUA-PULSE project aims to use UV LEDs in combination with a specially tailored photocatalyst to produce a more compact, more power-efficient and more portable water purification unit.

The project is funded by the European Union's Framework Programme 7, through a scheme aimed at giving European SMEs with limited R&D capabilities of their own, access to the research expertise of institutes such as CIT.

CAPPA Director, Dr Guillaume Huyet, said: "The AQUA-PULSE project is an excellent example of how CAPPA is helping local and European industry to realise the advantages of photonics for their own application areas, and is one of a number of on-going projects we have on water purification and monitoring".

● For more information see www.aqua-pulse.org