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Film Reveals Beetle from the Inside

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Frame from the award-winning film, an anatomical study of a female aquatic beetle

A biofilm that shows, from the inside, the anatomy of a small aquatic insect called Dryops has received the Best Film of the Year Award at the SkyScan Micro CT User Meeting 2012, an international conference of computed microtomography that took place in Brussels, Belgium, from April 3 to 5, 2012.

Professor Javier Alba Tercedor, of the University of Granada's Department of Zoology, was presented the award for his film titled "Micro-CT anatomical study of a female aquatic beetle (Insect: Coleoptera) of the genus Dryops". The video is available at <http://sl.ugr.es/01Hd>

Tomography is a non-invasive widespread technique used by the scientific community, especially in the field of medicine. Micro-CT generates high-resolution images, and no alterations have to be made to samples; consequently, valuable specimens can be studied without causing any harm to them.

Several projects and European funding have allowed large equipment purchases. In late 2007, the University of Granada acquired the high-resolution microtomograph Skyscan 1172. Since then, Professor Alba Tercedor has mastered the use of the tool and has obtained very satisfactory results. In 2010, he was awarded the Best Image award at the SkyScan Micro CT Meeting.

A Technique with Many Possibilities

At present, Professor Alba affirms to be "a microtomography enthusiast," as it offers many innovative possibilities. His research studies have been published in prestigious journals, and have revealed anatomical aspects so far unknown. In addition, his research has elucidated a set of controversial aspects, such as why some beetle species can fly by day, while others only fly by night or under low temperatures (study published in the journal *Plus One* available at <http://sl.ugr.es/01He>); he also solved the question about the defensive or structural function of the small needles (spicules) that some sea slugs have in their inside (published in *Microscopy and Analysis*, available at <http://sl.ugr.es/01Hf>).

The University of Granada has acquired a micro-CT that can be fitted to a sweep electron microscope and generates images of 0.5 microns. Videos made using this technology are available at: <http://www.youtube.com/user/albatercedor>.



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