

Under the Microscope #11 - Jet streams

February 24 2012

In this video Dr Sungjune Jung shows us the fluid structures produced by the impact of two liquid jets.

Dr. Jung: “This video shows the evolution of the flow structures generated from the collision of two liquid jets each with a radius of 420um. The jets were ejected from parallel cylindrical [nozzles](#) with an internal diameter of 0.85mm.

The collision of the jets resulted in various systems of behaviour which depend on the jet velocities and the liquid properties. We focus on the system where the impinging jets form a liquid sheet which then breaks up into a regular succession of ligaments and [droplets](#), a so-called “fishbone” pattern. This high-speed imaging reveals a fish-like formation for the fluid.

The oval sheet with rims correspond to the fish head, the drops on thin ligaments to its body, and bigger free drops at the end to its tail. We are particularly interested in this fluid formation, because the fishbone phenomenon provides a simple and visual tool to evaluate the properties of inkjet printing fluids, with which the fishbone structure sensitively varies.”

Under the Microscope is a collection of videos that show glimpses of the natural and man-made world in stunning close-up. They are released every Monday and Thursday and you can see them here: bit.ly/A6bwCE

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Hoath at Inkjet Research Centre, Department of Engineering.

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