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Fluid Mechanics of the “Vortex Fluidic Device” STUART DALZIEL, University of Cambridge, JOSHUA BRITTON, COLIN RASTON, Flinders University — The Vortex Fluidic Device (VFD) provides a new “green” alternative for many industrially important organic chemistry processes including the generation of biodiesel. Improved chemical kinetics have also been demonstrated for a number of reactions. This relatively simple device, comprising essentially of a rapidly rotating tube, provides advantages ranging from reduced energy requirements and waste streams to high flow rates and the avoidance of clogging. The VFD is effective due to the interplay between fluid mechanics and chemistry providing near optimal conditions for the required reactions. This contribution provides an insight into the rich fluid mechanics of the device.

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