

# THE FLOATING WATER BRIDGE

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When high voltage is applied to distilled water filled into two glass beakers which are in contact, a stable water connection forms spontaneously, giving the impression of a floating water bridge. The set-up consists of two beakers (100 mL) filled with triply deionized water ( $R=18\text{ M}\Omega\cdot\text{cm}$ ). The beakers are set on an even plane, one fixed, the other movable and controlled by a step motor, and both beakers are in contact with each other. When exposed to a high d.c. voltage of 15 kV by putting electrodes into the beakers, the water forms a stable, cylindrical bridge between two beakers. If the movable vessel is dragged away from the other, the bridge is holding and can be prolonged up to 25 mm if the voltage is raised to 25 kV. An effective transport of water from one vessel to the other can be observed, mostly from the anode side to the cathode side, but sometimes also the other way round.

A detailed experimental analysis that revealed static and dynamic structures as well as heat and mass transfer through this bridge was presented earlier [1]. Additional effects like, e.g., the interaction of the bridge with a static magnetic field and an electrostatically charged rod are discussed. Based on this preliminary results which were presented on several scientific conferences an intense research into the mechanisms of the formation destruction as well as the inner structures of the bridge is planned.



[1] *The floating water bridge*, J. Phys.D: Appl. Phys. **40** (2007) 6112-6114