Comparison of Hydrodynamic Cavitation Devices based on Linear and Swirling Flows: Degradation of dichloroaniline in water

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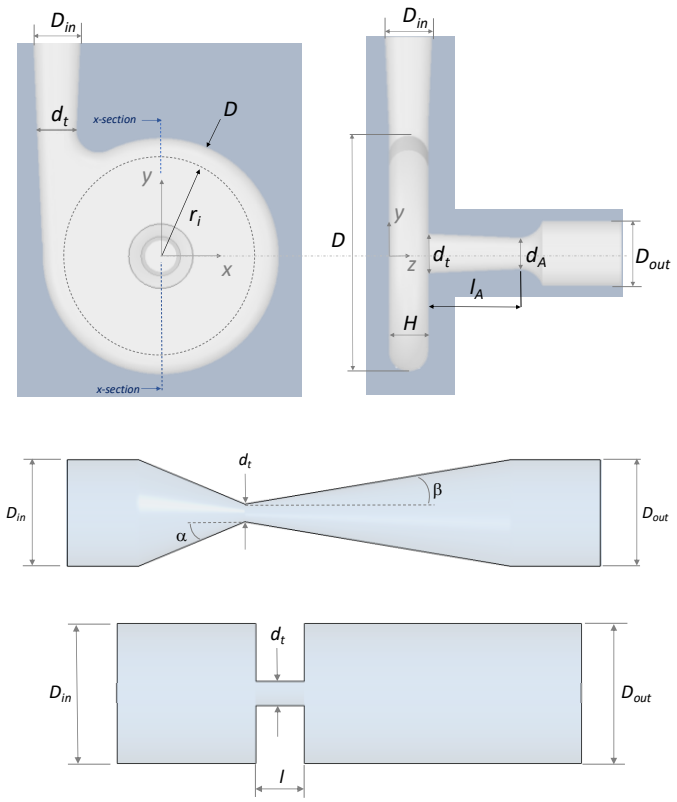
Supplementary Information

The schematic and relevant dimensions for linear – (orifice/venturi) and vortex-based cavitation devices are shown in Figure S.1.



D [mm]	72.0
D_{in} [mm]	18.2
r_i [mm]	30.0
d_t [mm]	12.0
d_A [mm]	9.6
D_{out} [mm]	18.2
l_A [mm]	27.2
H [mm]	12.0

D_{in} [mm]	25.4
α°	22.5
d_t [mm]	4.0
β°	9.25
D_{out} [mm]	25.4

D_{in} [mm]	25.4
d_t [mm]	5.0
l [mm]	10.0
D_{out} [mm]	25.4

Figure S.1: Schematic of linear and vortex based cavitation devices (Reprinted in part from Simpson, A. and Ranade, V.V., 2019. 110th Anniversary: Comparison of Cavitation Devices Based on Linear and Swirling Flows: Hydrodynamic Characteristics. *ACS Ind. Eng. Chem. Res.*, **58**(31), 14488-14509)

The UV-Vis spectroscopy profile for DCA is shown in Figure S.2 (a), the absorption maxima occurs at 241-nm. The calibration curve for analysis was prepared with the absorption maxima and is shown in Figure S.2 (b).

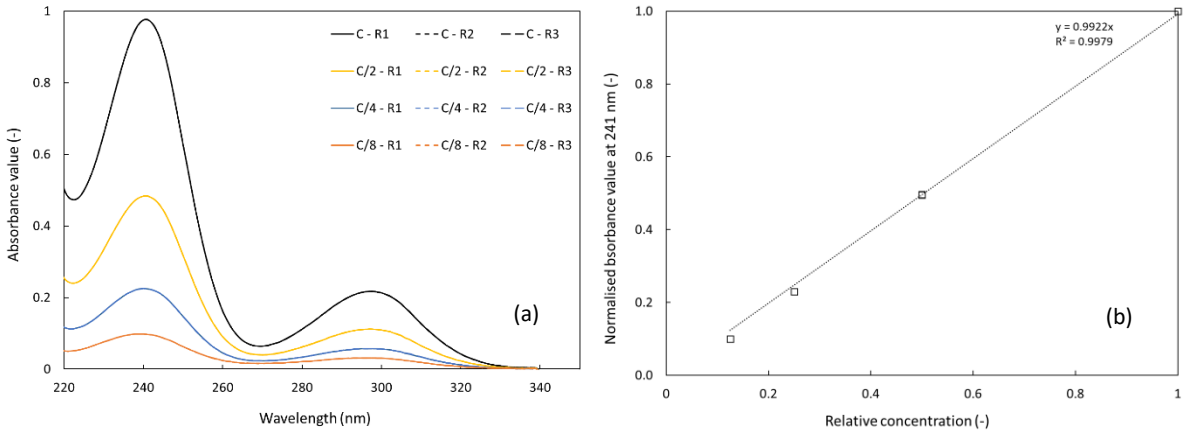


Figure S.2: (a) UV-Vis spectroscopy profile for DCA and (b) UV-Vis calibration curve for DCA.

The degradation profile for device D1 at operating pressure drop conditions of 100 and 200 kPa is presented in Figure S.3. The concentration profiles at 100 and 200 kPa were indistinguishable.

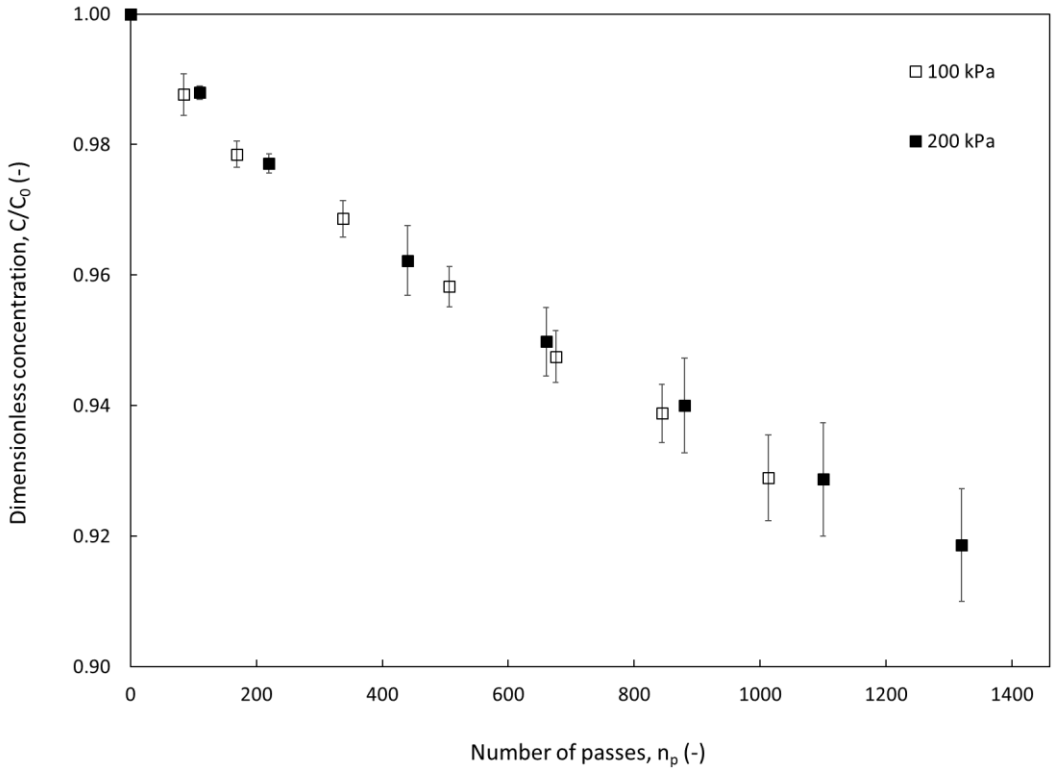


Figure S.3: Influence of pressure drop on degradation of DCA for device D1.