

## *Supporting Information*

# **Continuous Flow Experimental Study on Ozonation of Ibuprofen Catalyzed by Silicate-Based Microfiltration Membrane**

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### **Text S1: the production process of silicate-based microfiltration membrane**

The membranes were produced using quartz, cement and deionized water. The quartz-to-cement weight ratios (q/c) used 0.3. Fabrication of the membrane was based on a dry press molding process. First, the quartz particles were added to the cement particles, followed by dry-mixing for 2 min ( $10 \text{ r s}^{-1}$ ) in a stainless-steel agitator. An appropriate amount of deionized water was then introduced into the mixture with stronger mechanical stirring ( $30 \text{ r s}^{-1}$ ) to prepare a paste. Next, 10.5 g of the paste was placed into a circular stainless-steel mold consisting of a ring (70 mm outer diameter, 50 mm inner diameter and 3 mm thickness) and a desk (70 mm diameter and 3 mm thickness). A thin plastic sheet was sandwiched between the ring and the desk to facilitate separation of the paste from the mold. The mold was then carefully transported to a pressure shaping machine, and the paste was pressed at 6 MP for 1 min. Next, the mold was placed in a standard curing box (Shang Hai Jing Hong Laboratory Instrument Co., Ltd., China), in which the temperature and humidity were controlled at  $20^{\circ}\text{C}$  and 95%, respectively. After 48 h, the shaped paste was taken out of the mold and stored in the standard curing box again for 10 days. Ten days later, the cementitious microfiltration membrane was formed, with a diameter of 50 mm and a thickness of 3 mm. Finally, the membrane was polished by abrasive paper to ensure that it was smooth and flat.