



J. Serb. Chem. Soc. 84 (2) S33–S34 (2019)

SUPPLEMENTARY MATERIAL TO
**Synthesis of crosslinked PVA-ceramic composite membrane for
phenol removal from aqueous solution**

VANDANA GUPTA and JAYAPAL ANANDKUMAR*

*Department of Chemical Engineering, National Institute of Technology Raipur,
Chhattisgarh-490210, India*

J. Serb. Chem. Soc. 84 (2) (2019) 211–224

MATERIALS AND METHODS

Fabrication of composite membrane

Ceramic support was prepared by mixing various ingredients at certain proportion which is given in Table I. Uniaxial method was used to fabricate the ceramic support. Fabricated ceramic disc was kept in a hot air oven at 105 °C for 2 h to remove the moisture. Thereafter disc was sintered in muffle furnace at 800 °C for 12 h.

PVA (10 wt. %) solution was prepared at 70 °C using double distilled water and thereafter various amount of formaldehyde (1–5 g) was slowly added in PVA solution. This mixer was kept for 12 h stirring and heating to get homogenous PVA-formaldehyde solutions. Subsequently, PVA-formaldehyde solution was kept in the ultrasonic bath for 1 h at 70 °C to remove the tinny air bubbles from the polymer solution. Bubble free homogeneous polymeric solution was then uniformly cast on the ceramic support with the help of glass casting rod. Prepared CM was allowed for overnight drying at ambient temperature followed by hot air oven drying (105 °C) for 2 h. Synthesized CMs are named as PF₀, PF₁, PF₂, PF₃, PF₄ and PF₅ for 0, 1, 2, 3, 4 and 5 g formaldehyde with PVA solution, respectively.

* Corresponding author E-mail: anandj.che@nitrr.ac.in

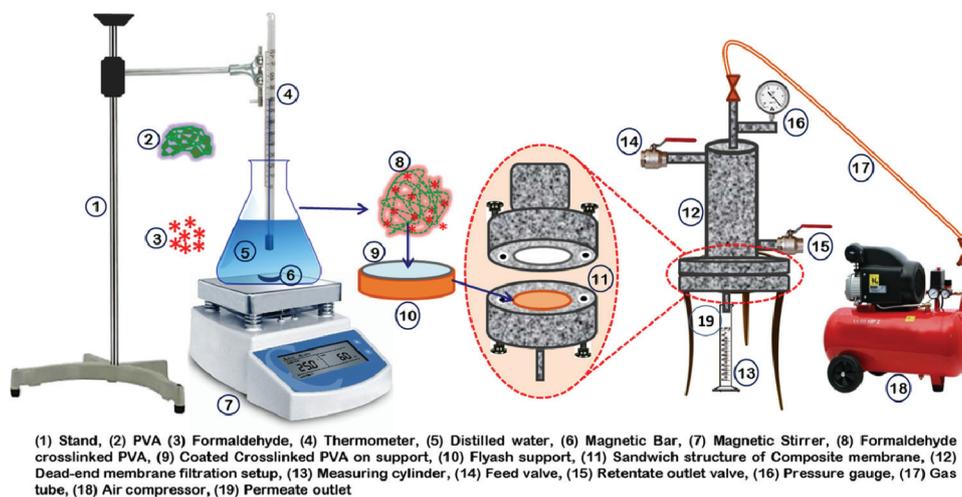


Fig. S-1. Schematic diagram of composite membrane synthesis and dead-end membrane filtration.