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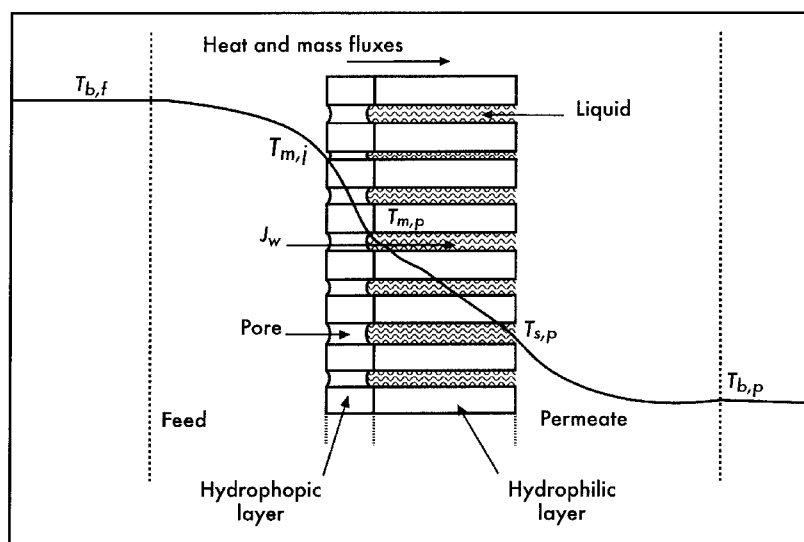


FIGURE 1

(57) Abstract: The present invention provides composite membranes for membrane distillation and related methods of manufacture. In particular, there is provided a composite hydrophilic/hydrophobic membrane comprising a hydrophilic polymer layer and a hydrophobic polymer layer comprising fluorinated surface-modifying macromolecules, wherein said composite membrane has a high vapour flux. There is also provided methods of manufacturing and optimizing the composite membranes and a membrane distillation system comprising the composite membranes.