

Abstract Submitted
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of Raman chemical imaging for quantifying and qualifying membrane fouling¹ SAMAR AZIZIGHANNAD, WORAWIT INTRCHOM, SOM-ENATH MITRA, New Jersey Inst of Tech — h — *abstract* — **pard** Operating Membranes in verity of industries such as pharmaceutical, food processing and water purification and desalination. During the membrane process, the pores are covered with foulants which affects flux rate, membrane lifetime and operation time. It is valuable to understand the effect of foulants causing pore blockage in the membranes. In this research Raman Chemical Imaging introduced an effective method to characterize foulants caused by three different salts namely CaSO_4 , BaSO_4 and CaCO_3 on the surface of a Polytetrafluoroethylene (PTFE) membrane. Membrane distillation was operated in presence of the mentioned salts and fundamental information about location and distribution of the salts have been achieved. Raman chemical imaging has been introduced an effective method to identify and locate the foulants. It was observed that CaSO_4 tended to agglomerate and settle on the certain areas while BaSO_4 and CaCO_3 were distributed over the whole membrane. Information such as this can be used to study the mechanism of fouling. \pard/abstract-

¹Application of Raman chemical imaging for quantifying and qualifying membrane fouling

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