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| **Title:** | Fabrication of low-cost anodic aluminum oxide (AAO) tubular membrane and their application for hemodialysis | | |
| **Author(s) Name:** | Ajab Khan Kasi , Jafar Khan Kasi1, Mahadi Hasan, Nitin Afzulpurkar, Sirapat Pratontep, Supanit Porntheeraphat, Apirak Pankiew | | |
| **Contact Email(s):** | mahadi@aiub.edu | | |
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| **Abstract:** |  |
| This paper reports the fabrication of AAO tubular membrane using 99.35% and 99.58% pure Al and their potential application for hemodialysis. Here we discussed the effect of impurity on membrane structure. We found that the self organized structure of AAO nanochannels minimize the impurity defects in AAO membrane. If micro size impurity blocks the generation of AAO nanochannels then the neighboring nanochannels bend and make branches to fulfill that gap. We  observed that if impurity size is less than the AAO membrane thickness then it does not produce micro size hole. In low grade Al the periodic hexagonal order was disturbed however there was no big difference in pore diameter. It was observed that such type of membrane does not suffer from leakage problem and it can be used for filtration. The fabricated tubular membrane was used for hemodialysis successfully. The hemodialysis results show that AAO tubular membrane can be used for both diffusive and convective filtration. | |