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Title: Preparation of non-permselective sulfated zirconia catalytic membrane for use in a catalytic membrane reactor

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Highlights:

- Cost-effective sulfated zirconia catalytic membrane was prepared
- Aluminum isopropylate and silica powder were used to facilitate layers preparation
- Coating sol with strong acid media was not usable for fabrication of layers
- The tetragonal to monoclinic phase transformation was appropriately prevented
- The membrane had desirable crystalline phase, porous and crack-free microstructure

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