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Preparation of Hollow Fiber through sintering Technique at King Saud University Riyadh in Saudi Arabia

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Permeable hollow fiber membranes Al_2O_3 have been prepared through a stage inversion sintering technique. Pd-loaded carbon nanotubes (CNTs) are shaped inside the hollow fiber wall by the catalytic putrefaction of methane over Fe particles, tracked by impregnation and decrease with hydrogen to form catalytic hollow fiber membranes. Hydrophobic amendment of the hollow fibers is directed by gas absorbent polymeric coating. The resultant hollow fiber membranes display highly catalytic activity to the hydrogenation reduction of nitrites in aqueous solution. Hollow fiber membrane reactors are accumulated for nitrite hydrogenation by pushing nitrite solution into the tube side and introducing hydrogen counter currently to the shell side of the reactor. The nitrite elimination in the hollow fiber membrane reactors upsurges with the operation temperature and the hydrogen feed concentration at lower hydrogen partial pressures, but less prejudiced by the hydrogen feed concentration when it is greater than 52.5%. A higher nitrite concentration favors the nitrite hydrogenation reaction but lowers the nitrite removal competence.

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