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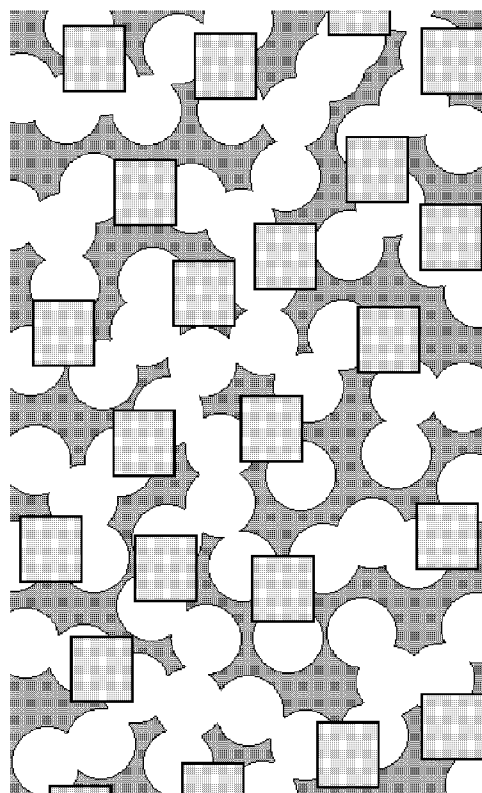
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(54) Title: HIGH SELECTIVITY POLYMER-NANO-POROUS PARTICLE MEMBRANE STRUCTURES

Figure 1



(57) Abstract: High selectivity polymer-nano-porous particle membrane structures, or ZeoTIPS membranes, that are useful for both water purification (removal of salts and dissolved organics) and gas separation are provided, as well as methods of fabricating such membranes. Such membranes may comprise at least one nano-porous particle; a microporous polymer matrix; and pores ranging from about 0.3 nm to about 1 nm. Such methods of fabricating polymer-nano-porous particle membranes may comprise mixing at least one nano-porous particle into a homogeneous solution of a polymer and a diluent at an elevated temperature to form a mixture, and cooling the mixture to solidify a microporous polymer matrix.

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