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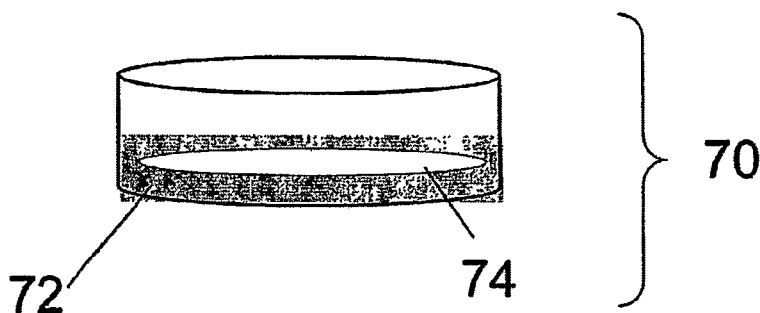
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(54) Title: POROUS POLYMERIC ARTICLES



(57) Abstract: Porous polymeric articles,
and more specifically, porous polymeric
articles for tissue engineering and organ
replacement, are described. In some
embodiments, methods described herein
include use of a polymer-solvent system
(e.g., phase inversion) to generate porosity
in a structure. The process may include
formation of a structure precursor material
including a first crosslinkable component
and a second component that can be
precipitated in a precipitation medium. The
structure precursor material may be shaped

into a three-dimensional shape by a suitable technique such as three-dimensional printing. Upon shaping of the structure precursor material, at least a portion of the first component may be crosslinked. The structure may then be contacted with a precipitation medium to remove the precursor solvent from the structure, which can cause the second polymer component to precipitate and form a porous structure containing a network of uniform pores. In some embodiments, the porous structure is constructed and arranged for use as a template for ultrafiltration, cell growth, and/or for forming complex, biomimetic, porous biohybrid organs, where living cells can be immobilized and perform their normal physiological functions.