What is claimed is:

1. A membrane in the form of a hollow fiber, wherein i) the fiber has a porous wall of a polymeric component enclosing a central hollow space extending the length of the fiber, ii) the polymeric component has a crystallinity as determined by wide angle x-ray diffraction of greater than 20% and less than 35%, as measured on the polymeric component starting material, iii) the polymeric component is comprised of at least one homopolymer or copolymer of vinylidene fluoride, iv) the membrane has an energy to break of at least 0.5 J per square mm of membrane cross section, and v) wherein the porous wall is free of macrovoids, wherein the polymeric component is selected from the group consisting of:
   a) a polymer which is a copolymer of from 80% to 99% by weight of vinylidene fluoride and from 1% to 20% by weight of one or more co-monomers;
   b) a blend of from 10% to 80% by weight vinylidene fluoride homopolymer and from 20% to 90% by weight of a copolymer of from 60% to 99% by weight of vinylidene fluoride and from 1% to 40% by weight of one or more co-monomers;
   c) a blend of from 10% to 80% by weight high crystallinity vinylidene fluoride homopolymer, wherein said high crystallinity is greater than 35% as determined by wide angle x-ray diffraction and from 20% to 90% by weight low crystallinity vinylidene fluoride homopolymer, wherein said low crystallinity is a crystallinity of less than 20% as determined by wide angle x-ray diffraction;
   d) a vinylidene fluoride homopolymer or copolymer containing long chain branching, wherein said long chain branching means an average branch of larger than 2500 g/mol; and
   e) a vinylidene fluoride copolymer containing a fraction of very high molecular weight vinylidene fluoride homopolymer or copolymer, having a weight average molecular weight of greater than 580,000 g/mol and a number average molecular weight of greater than 220,000 g/mol.
2. The membrane of claim 1, wherein the polymeric component is a polymer which is a copolymer of from 80% to 99% by weight of vinylidene fluoride

and from 1% to 20% by weight of one or more co-monomers selected from the group consisting of hexafluoropropylene, chlorotrifluoroethylene, tetrafluoroethylene, trifluoroethylene, vinylacetate, vinylsulfonic acid, vinyltrimethylsilane, tetrafluoropropylene, acrylic acid and methacrylic acid.

3. The membrane of claim 1, wherein the polymeric component is a blend of from 10% to 80% by weight vinylidene fluoride homopolymer and from 20% to 90% by weight of a copolymer of from 80% to 99% by weight of vinylidene fluoride and from 1% to 20% by weight of one or more co-monomers selected from the group consisting of hexafluoropropylene, chlorotrifluoroethylene, tetrafluoroethylene, trifluoroethylene, vinylacetate, vinylsulfonic acid, vinyltrimethylsilane, tetrafluoropropylene, acrylic acid and methacrylic acid.
4. The membrane of claim 1, wherein the polymeric component is a blend of from 10% to 80% by weight of a first vinylidene fluoride homopolymer having a degree of crystallinity of greater than 35% and from 20% to 90% by weight of a second vinylidene fluoride homopolymer having a degree of crystallinity of less than 20%.
5. The membrane of claim 1, wherein the membrane is unsupported.
6. A membrane module, wherein the membrane module comprises a plurality of hollow porous fibers of claim 1.
7. A method of making the hollow porous fiber of claim 1 useful in manufacturing membrane modules, comprising:
   a) extruding a composition comprised of a polymeric component, a pore enhancement agent and a solvent capable of dissolving the polymeric component and the pore enhancement agent to form a hollow fiber; and
   b) removing the solvent and pore enhancement agent from the hollow fiber to form the hollow porous fiber;

   wherein the polymeric component has a crystallinity as determined by wide angle x-ray diffraction of greater than 20% and less than 35% and the polymeric component is comprised of at least one homopolymer or copolymer of vinylidene fluoride.
8. The method of claim 7, wherein the pore enhancement agent is miscible with or soluble in water.

9. The method of claim 8, wherein the solvent and pore enhancement agent are removed from the hollow fiber by soaking the hollow fiber in water.
10. The method of claim 7, wherein the solvent is selected from the group consisting of amides, ketones, carbonates, ethers, ureas, trialkyl phosphates, esters, dimethylsulfoxide, hexamethylphosphoramide and combinations thereof .
11. A method of making a membrane module, comprising forming a plurality of membranes in accordance with claim 1 into a bundle.