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[Continued on next page]

- (54) **Title:** PREPARATION OF ZEOLITIC IMIDAZOLATE FRAMEWORKS (ZIFS) - POLYBENZIMIDAZOLE MIXED-MATRIX COMPOSITE AND APPLICATION FOR GAS AND VAPOR SEPARATION

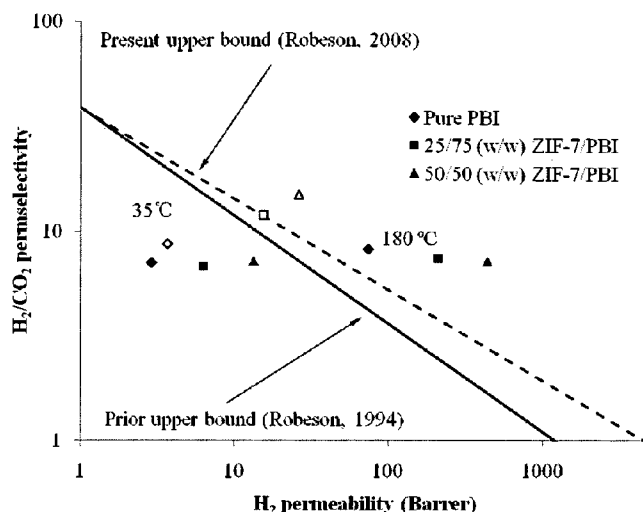


FIG. 4

- (57) **Abstract:** The present invention presents a mixed-matrix composite material comprising a continuous phase and zeolitic imidazolate framework (ZIF) particles dispersed in the continuous phase, wherein the continuous phase is polybenzimidazole (PBI), methods for making the mixed-matrix composite material, and methods for separating gas or vapor from a mixture of gases or vapors using the mixed-matrix composite material.



Declarations under Rule 4.17:

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