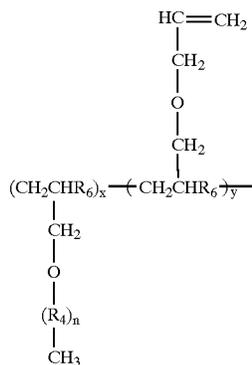


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alkali metal, alkali earth metal, H, tetraalkyl ammonium, trialkyl ammonium, imidazolium and pyridium, where the alkyl is a lower or higher alkyl.

9. The interpenetrating polymer network of claim 8, wherein the cation is Li.

10. The interpenetrating polymer network as claimed in claim 7, wherein the comb-branch polymer has the following structure:



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wherein R_4 comprises $-(\text{CH}_2\text{CH}_2\text{O})-$, $-(\text{CH}_2\text{CH}_2\text{CH}_2\text{O})-$, $-(\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{O})-$ or $-(\text{CH}_2\text{CHR}_5\text{O})-$, where R_5 is CH_3- , $\text{CH}_3\text{O}-$ or $\text{CH}_2\text{CH}_2\text{CH}_2\text{O}-$,

where R_6 is $-\text{CH}_2$, O, NH, Si or P,

n is an integer from about 2 to about 20, and

x and y are chosen such that the ratio x/y is from 1 to 30.

11. The comb-branch polymer of claim 10, wherein the ratio x/y is less than or equal to 20.

12. The comb-branch polymer of claim 11, wherein the ratio x/y is 1, 2.5, 5 or 10.

13. The comb-branch polymer of claim 10, wherein n is between 2 and 7.

14. The comb-branch polymer of claim 10, where R_6 is O or $-\text{CH}_2$.

15. The comb-branch polymer of claim 14, where R_6 is $-\text{CH}_2$.

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