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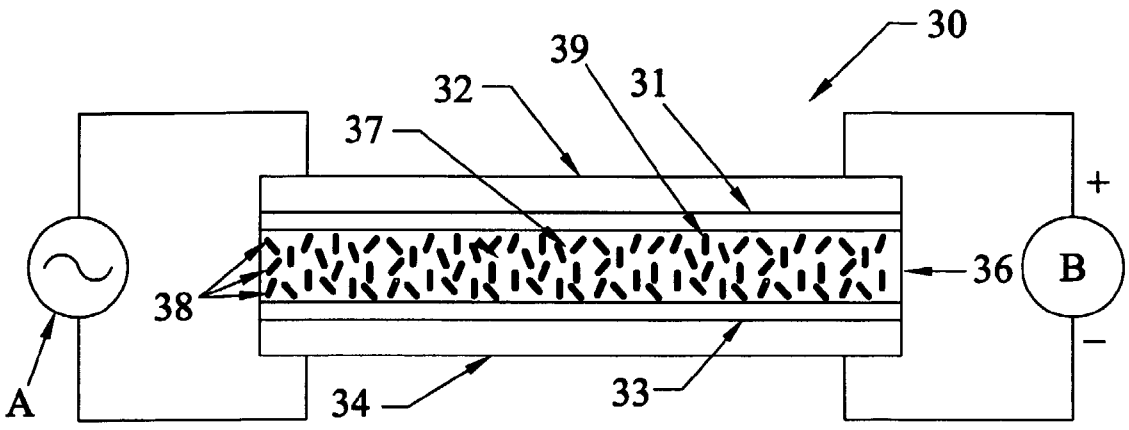
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(54) Title: VARIABLE CAPACITORS, COMPOSITE MATERIALS



(57) Abstract: Tunable capacitors (10, 20, 30, 40) have a dielectric material (16, 26, 36, 42) between electrodes, which dielectric material comprises an insulating material (17, 27, 37, 42) and electrically conductive material, (18, 28, 38, 48) e.g., conductive nanoparticulates, dispersed therein. In certain cases, enhanced tune-ability is achieved when the dielectric material comprises elongated nanoparticulates (38). Further enhanced tune-ability may be achieved by aligning elongated particulates in an electrode-to-electrode direction. Nanoparticulates may be produced by heating passivated nanoparticulates. Passivated nanoparticulates may be covalently bound within a polymeric matrix. High bias potential device structures can be formed with preferential mobilities.

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