

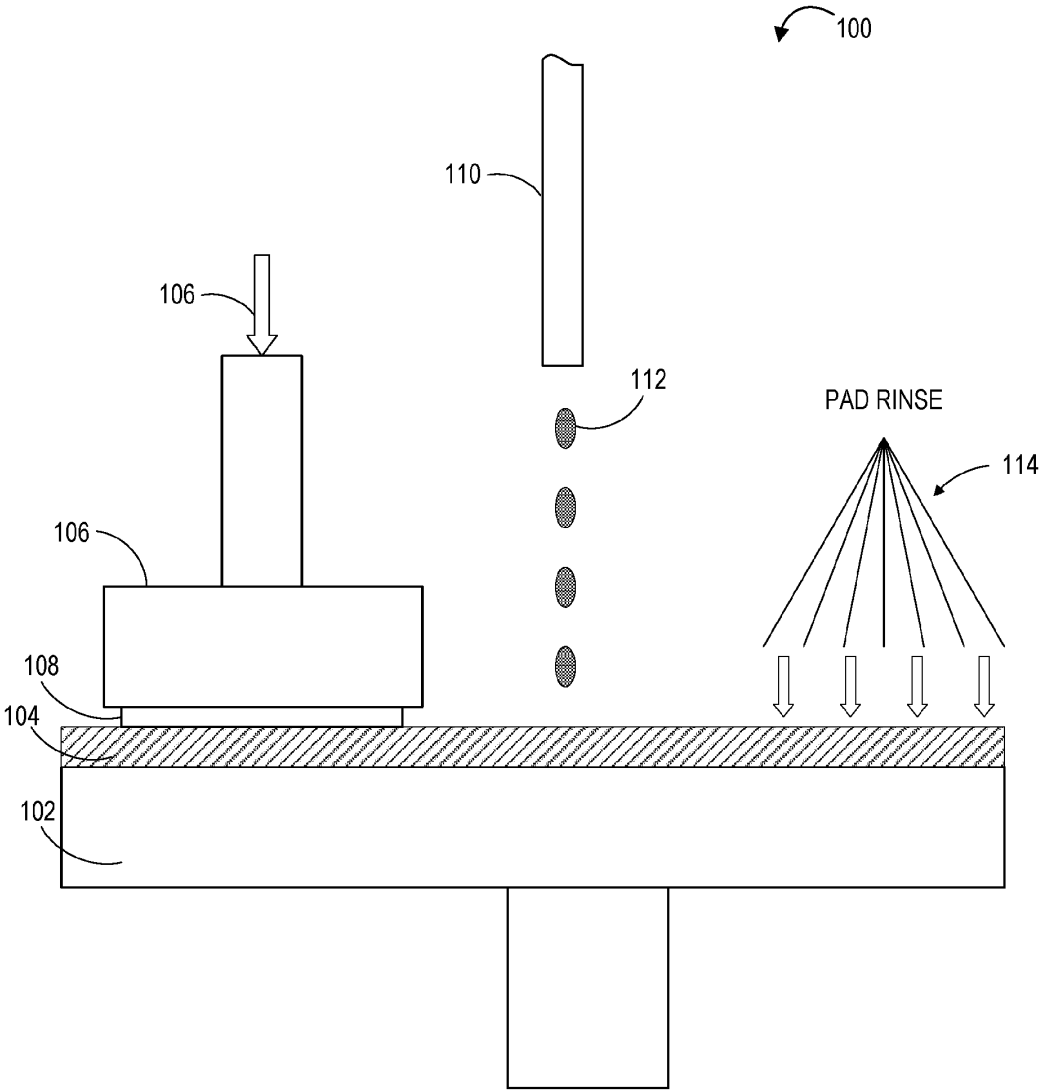


FIG. 1

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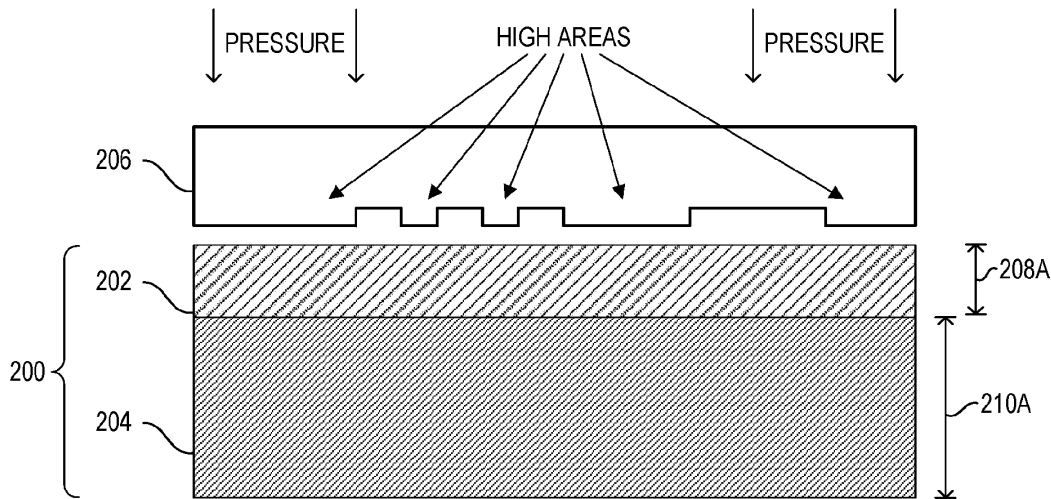


FIG. 2A

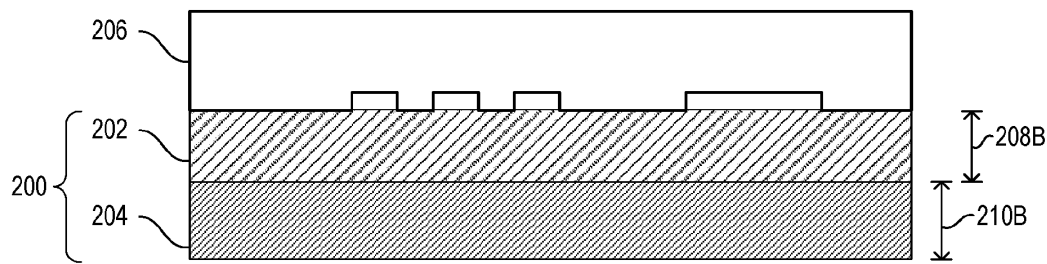


FIG. 2B

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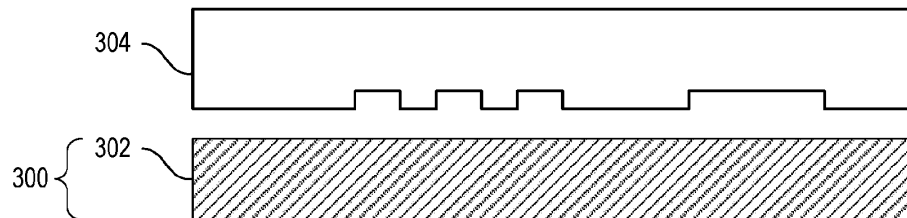


FIG. 3

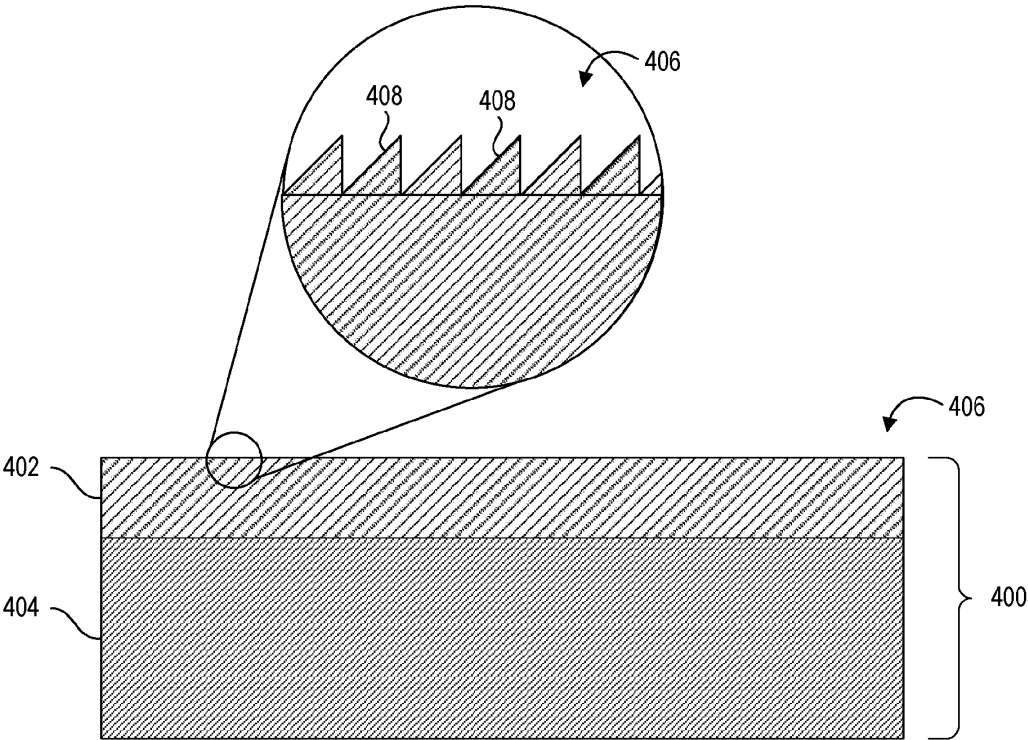
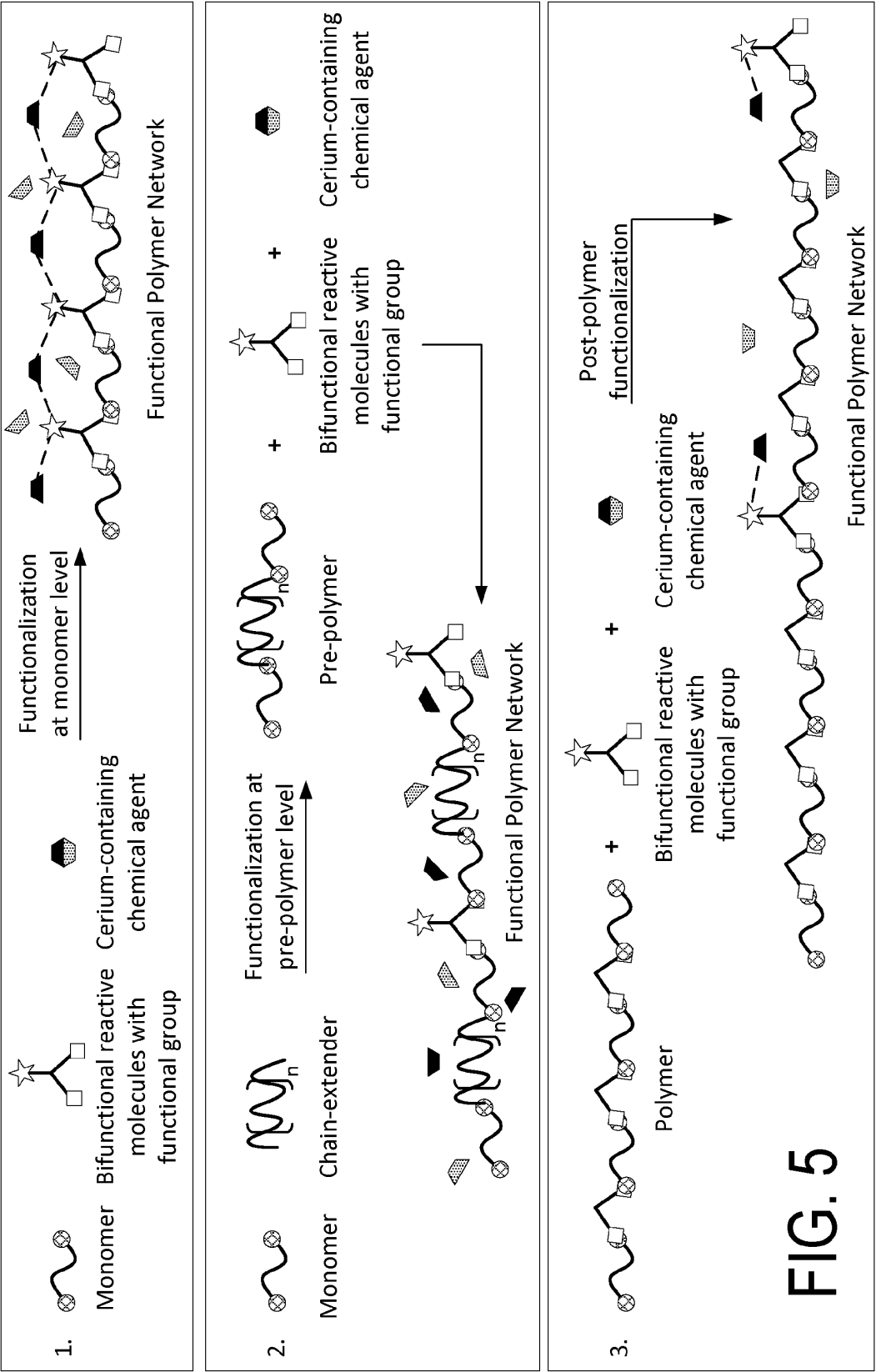


FIG. 4



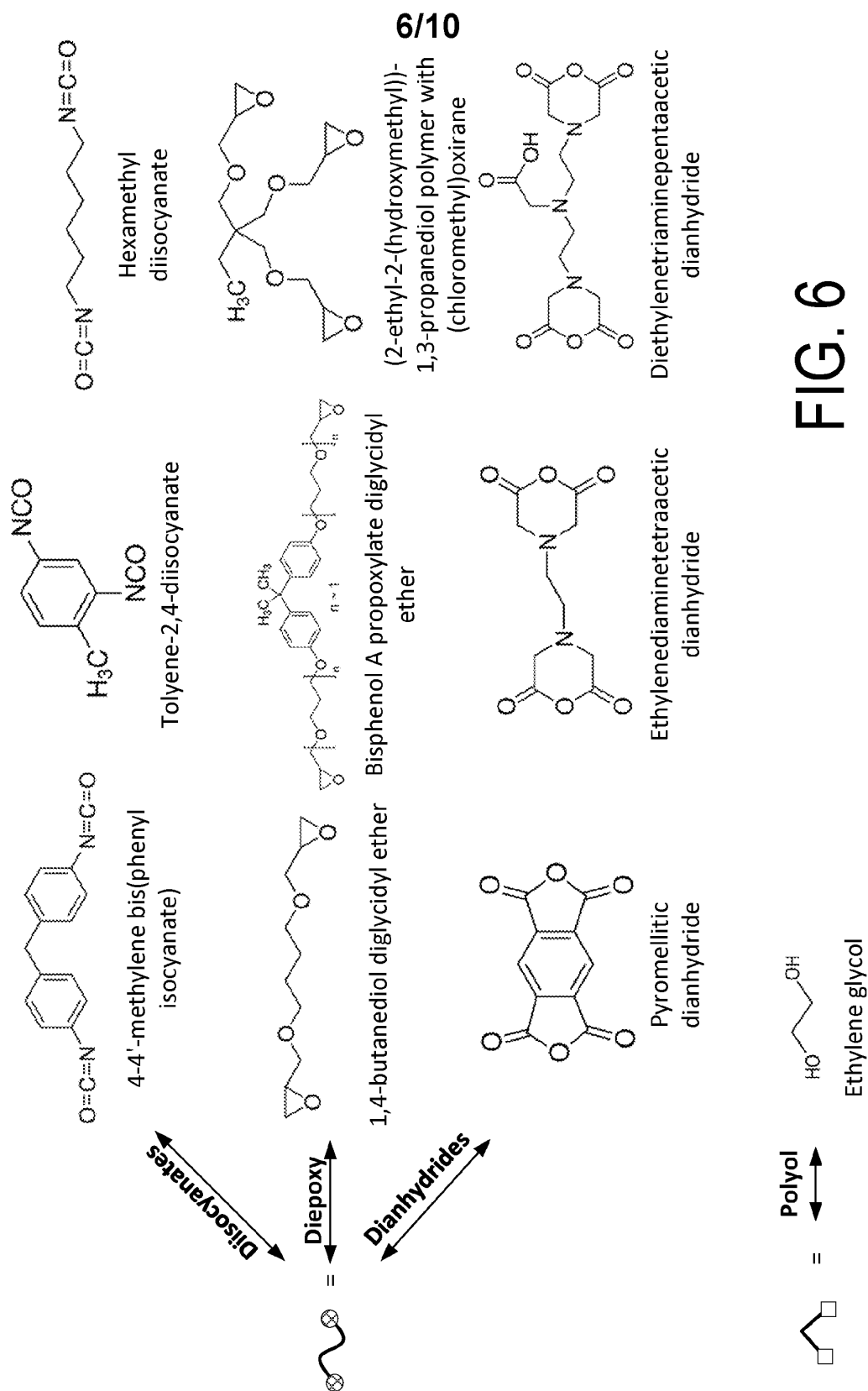


Fig. 6

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FORM A PAD FOR PERFORMING ABRASIVE-FREE CHEMICAL PLANARIZATION OF A SUBSTATE, THE PAD COMPRISING A POLYMER LAYER COMPRISING CERIUM SPECIES AND OPTIONALLY FUNCTIONAL GROUPS INCORPORATED IN THE POLYMER LAYER, THE FUNCTIONAL GROUPS COMPRISING ONE OR MORE OF A COMPLEXING AGENT OR A HYDROLYZING AGENT FOR INCORPORATING THE CERIUM SPECIES 702

REACT A PLURALITY OF REACTIVE UNITS WITH A PLURALITY OF MONOMER UNITS IN THE PRESENCE OF A CERIUM-CONTAINING CHEMICAL AGENT, ONE OR MORE OF THE PLURALITY OF REACTIVE UNITS OR THE PLURALITY OF MONOMER UNITS COMPRISING THE FUNCTIONAL GROUPS 704

REACT A PLURALITY OF REACTIVE UNITS WITH A PLURALITY OF OLIGOMER SEGMENTS IN THE PRESENCE OF A CERIUM-CONTAINING CHEMICAL AGENT, ONE OR MORE OF THE PLURALITY OF REACTIVE UNITS OR THE PLURALITY OF OLIGOMER SEGMENTS COMPRISING THE FUNCTIONAL GROUPS 706

CAST USING A PRE-POLYMER COMPRISING A CERIUM-CONTAINING CHEMICAL AGENT AND CURE THE PRE-POLYMER 708

MOLD THE POLYMER LAYER 710

REACT A SURFACE OF THE POLYMER LAYER WITH THE CERIUM-CONTAINING CHEMICAL AGENT AND WITH REACTIVE UNITS COMPRISING THE FUNCTIONAL GROUPS 712

SWELL THE POLYMER LAYER WITH A SOLVENT AND INCORPORATE THE CERIUM SPECIES AND FUNCTIONAL GROUPS INTO AT LEAST A PORTION OF A BULK VOLUME OF THE POLYMER LAYER 714

FUNCTIONAL GROUPS ARE LOCATED ON AN ISOCYANATE MOIETY OR A POLYOL MOIETY OF A POLYURETHANE 716

FUNCTIONAL GROUPS ARE LOCATED ON AN ANHYDRIDE MOIETY OR A POLYOL MOIETY OF A POLYANHYDRIDE 718

FUNCTIONAL GROUPS ARE LOCATED ON AN EPOXIDE MOIETY OF AN EPOXY OR ON A POLYOL MOIETY WITHIN AN EPOXY 720

TO FIG. 7B

FIG. 7A

SUBSTITUTE SHEET (RULE 26)

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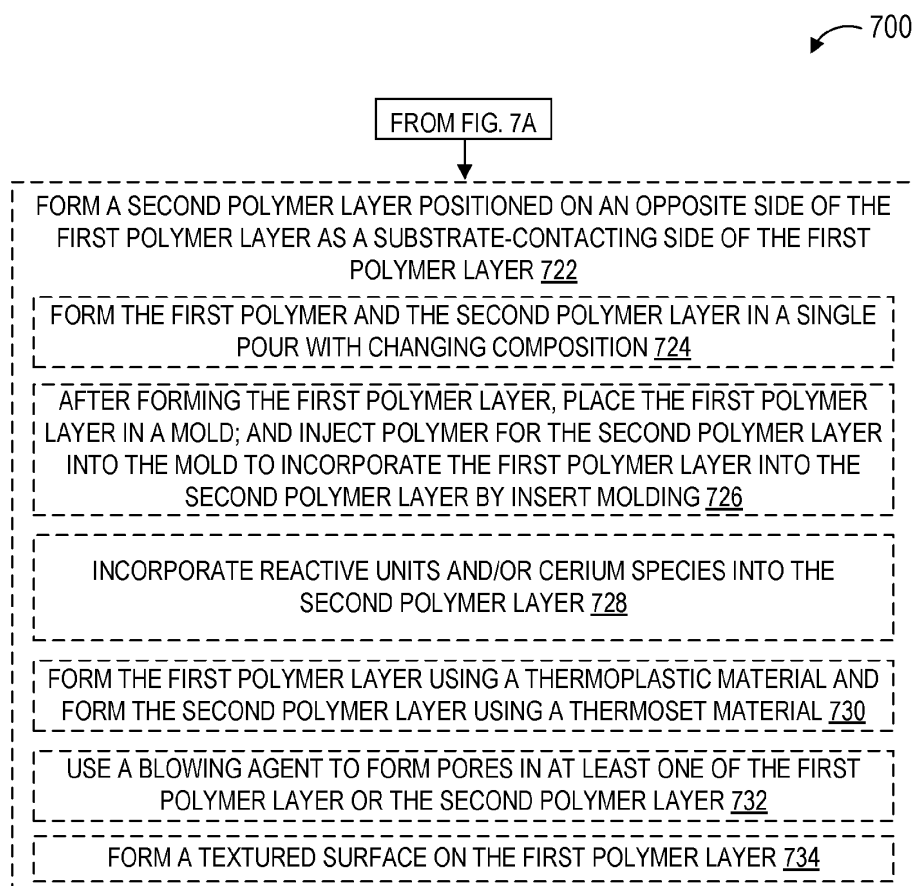


FIG. 7B

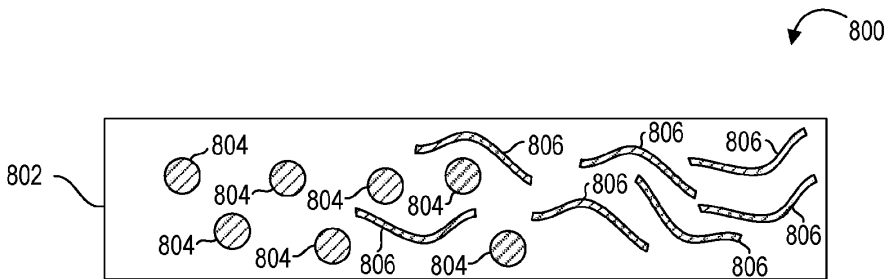


FIG. 8

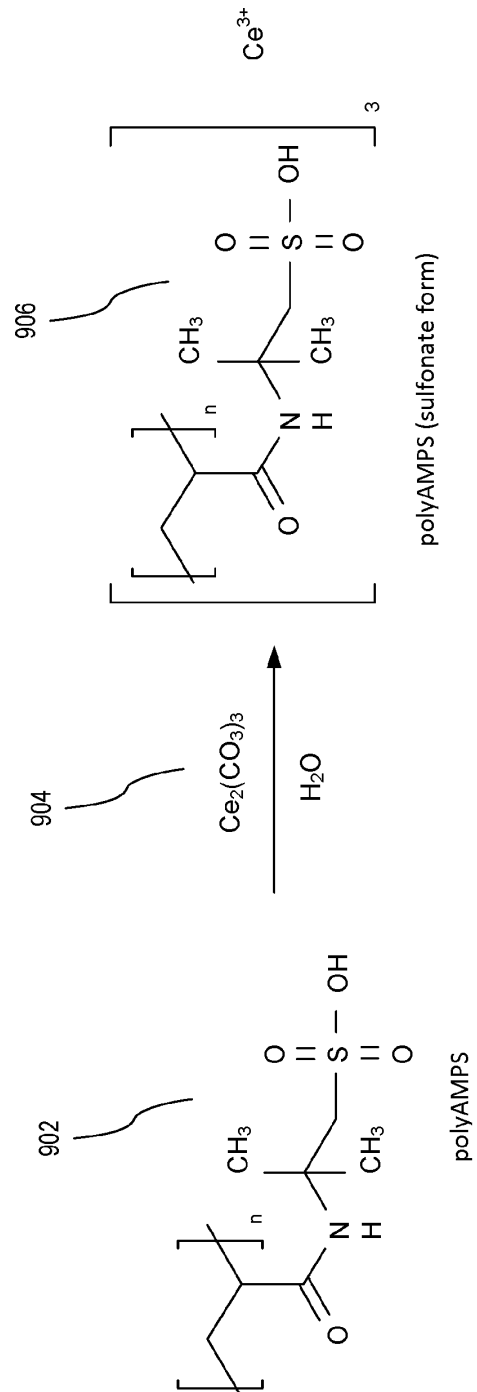


FIG. 9