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(54) **Title**: LIGHT-UP PREVENTION IN ELECTROSTATIC CHUCKS

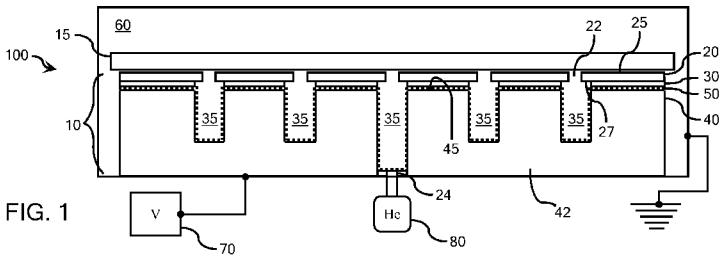


FIG. 1

(57) **Abstract**: An electrostatic chuck assembly is provided comprising a ceramic contact layer, a patterned bonding layer, an electrically conductive base plate, and a subterranean arc mitigation layer. The ceramic contact layer and the electrically conductive base plate cooperate to define a plurality of hybrid gas distribution channels formed in a subterranean portion of the electrostatic chuck assembly. Individual ones of the hybrid gas distribution channels comprise surfaces of relatively high electrical conductivity presented by the electrically conductive base plate and relatively low electrical conductivity presented by the ceramic contact layer. The subterranean arc mitigation layer comprises a layer of relatively low electrical conductivity and is formed over the relatively high conductivity surfaces of the hybrid gas distribution channels in the subterranean portion of the electrostatic chuck assembly. Semiconductor wafer processing chambers are also provided.

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