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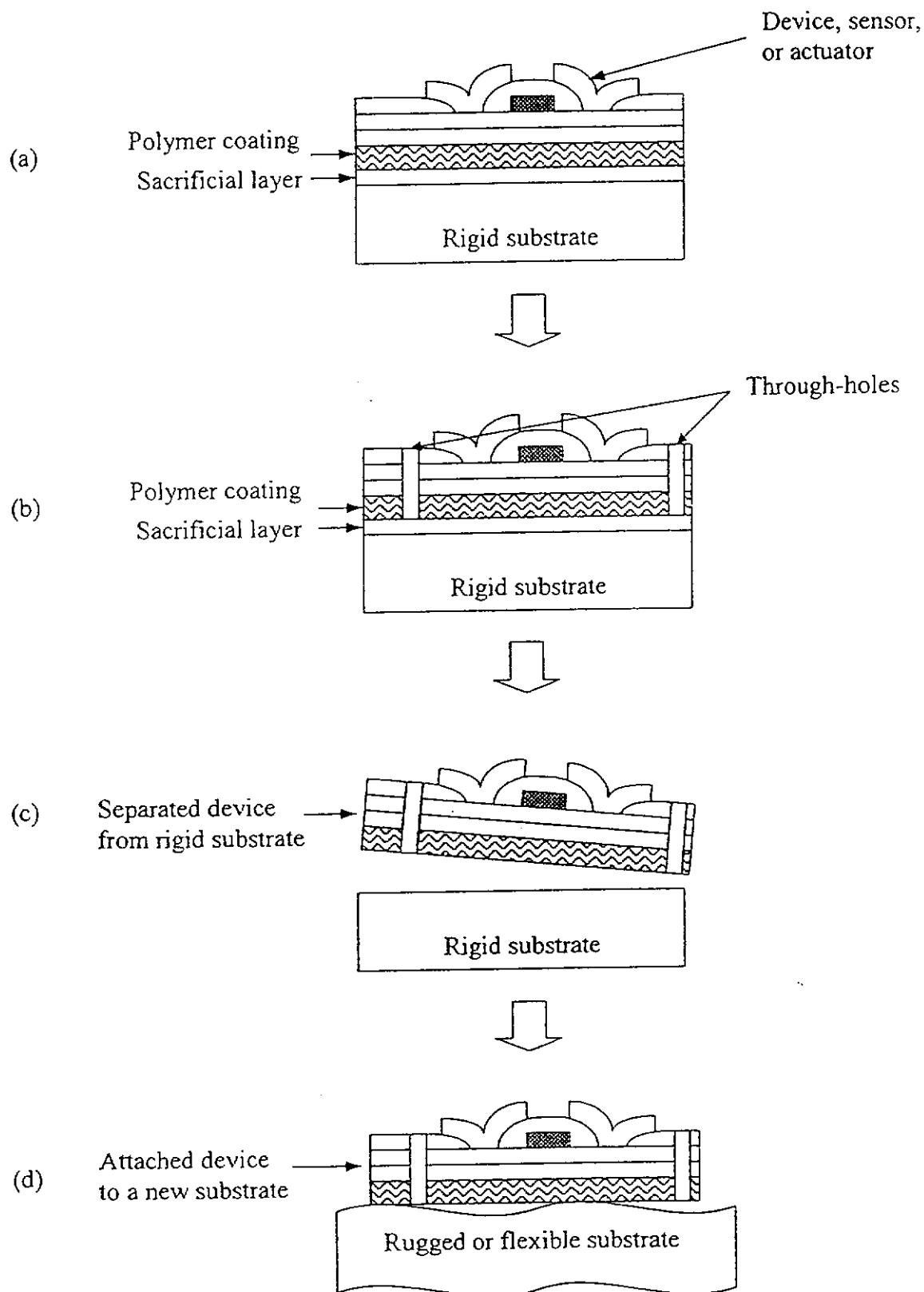
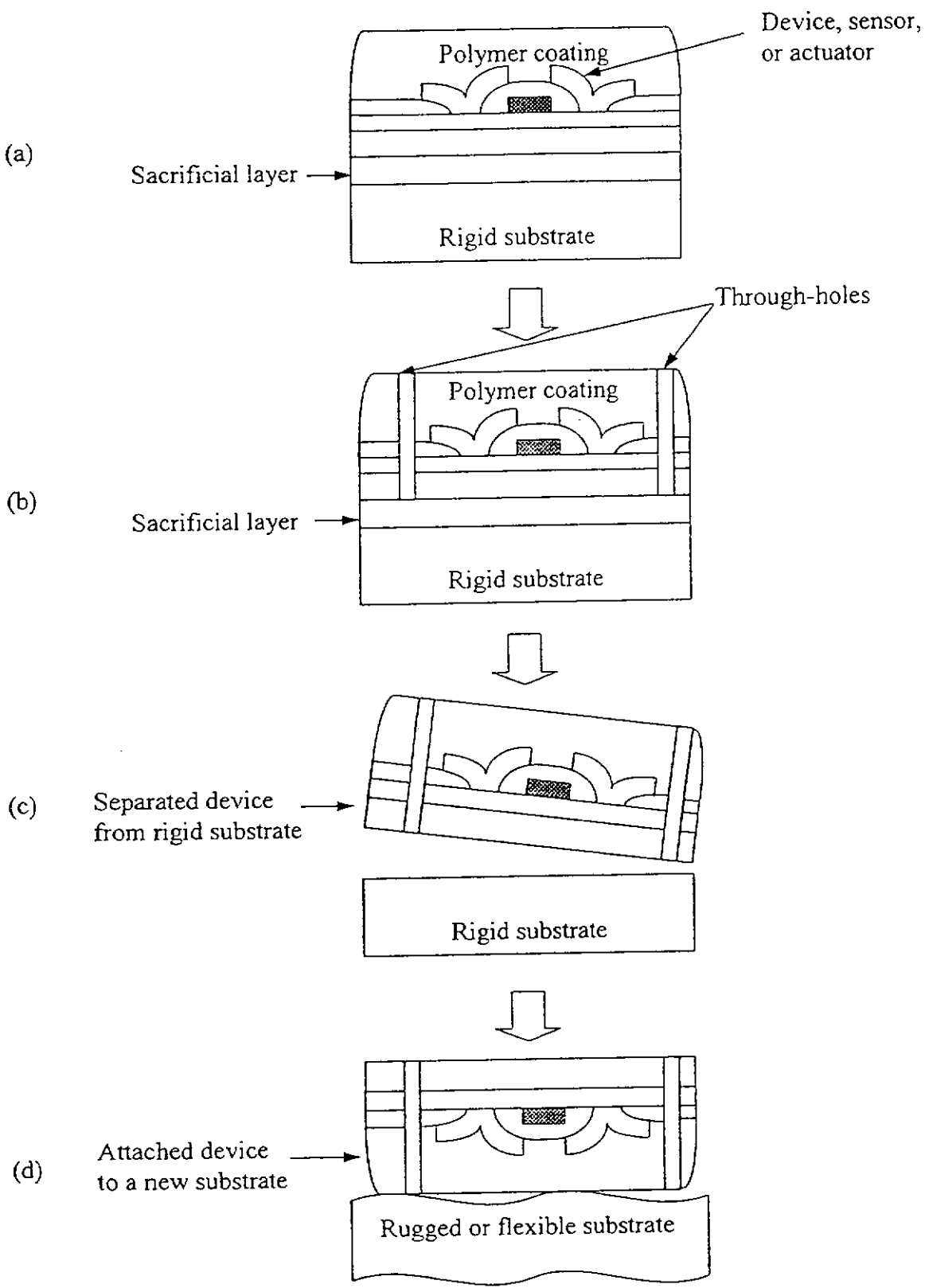
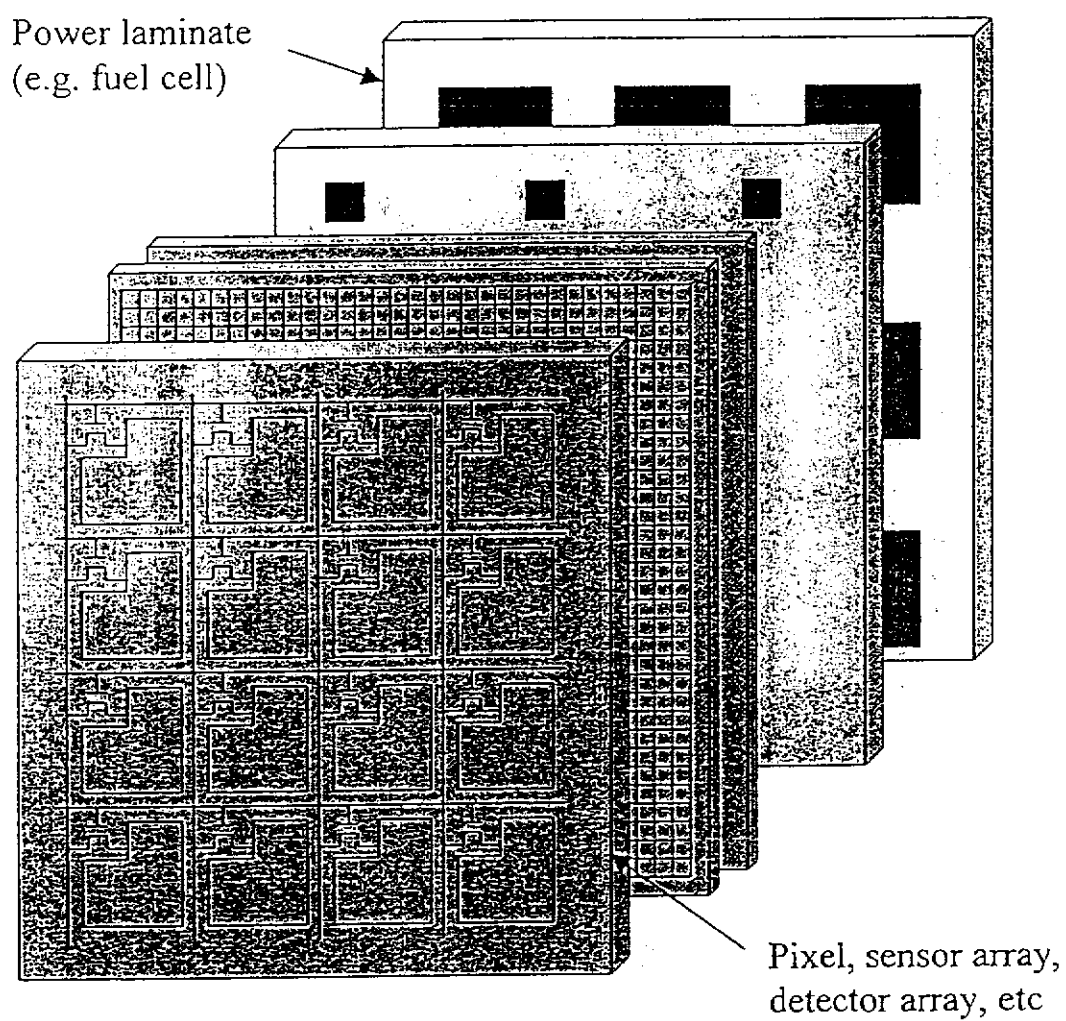


Figure 2

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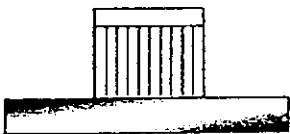
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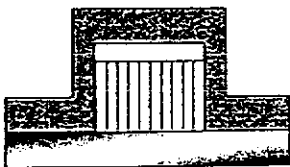
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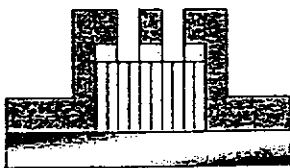
(a) Sacrificial layer deposition



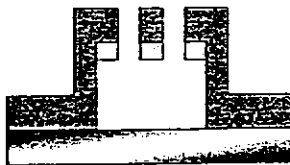
(b) Lithography and etching



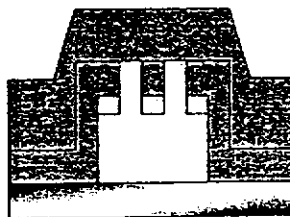
(c) Wall /capping layer deposition



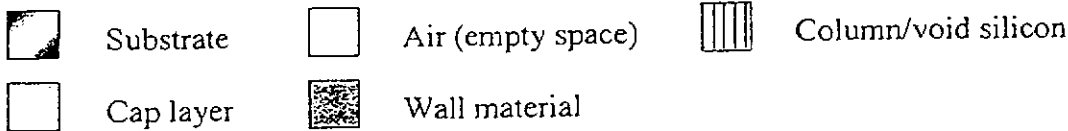
(d) Wet etchant access window etching
(Holes occur as needed in top or sides for effective etching)



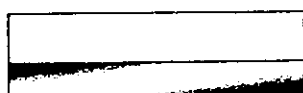
(e) Sacrificial layer etching



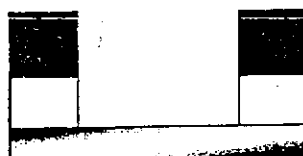
(f) Window filling



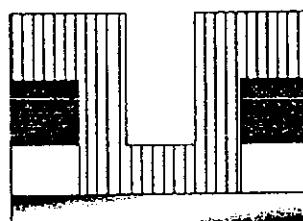
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(a) Base layer deposition



(b) Lithography and base layer etching



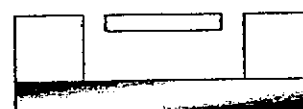
(c) Sacrificial layer deposition



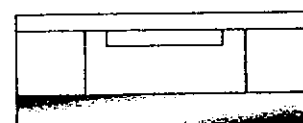
(d) Lift-off



(e) Capping layer deposition

(f) Wet etchant access window etching
(Holes occur as needed in top or sides for effective etching)

(g) Sacrificial layer etching



(h) Window filling



Substrate



Air (empty space)



Column/void silicon



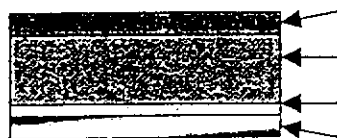
Stencil layer



Base/wall/cap material or materials

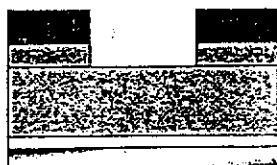
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(a) Base layer deposition

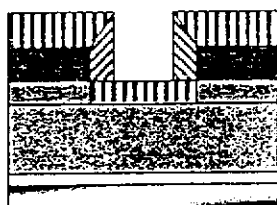


base layer (e.g., silicon nitride)
deposited (e.g., a-Si or poly Si)
optimal etch stop or barrier layer
substrate

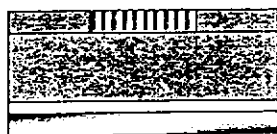
(b) Lithography and base layer etching



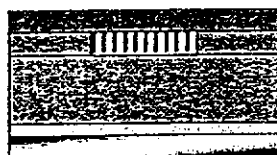
(c) Sacrificial layer deposition



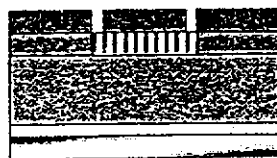
(d) Lift-off



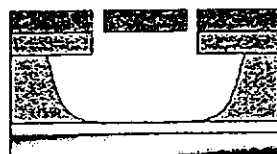
(e) Capping layer deposition



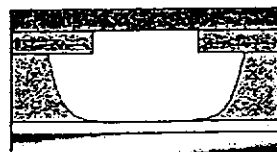
(f) Etchant access window etching



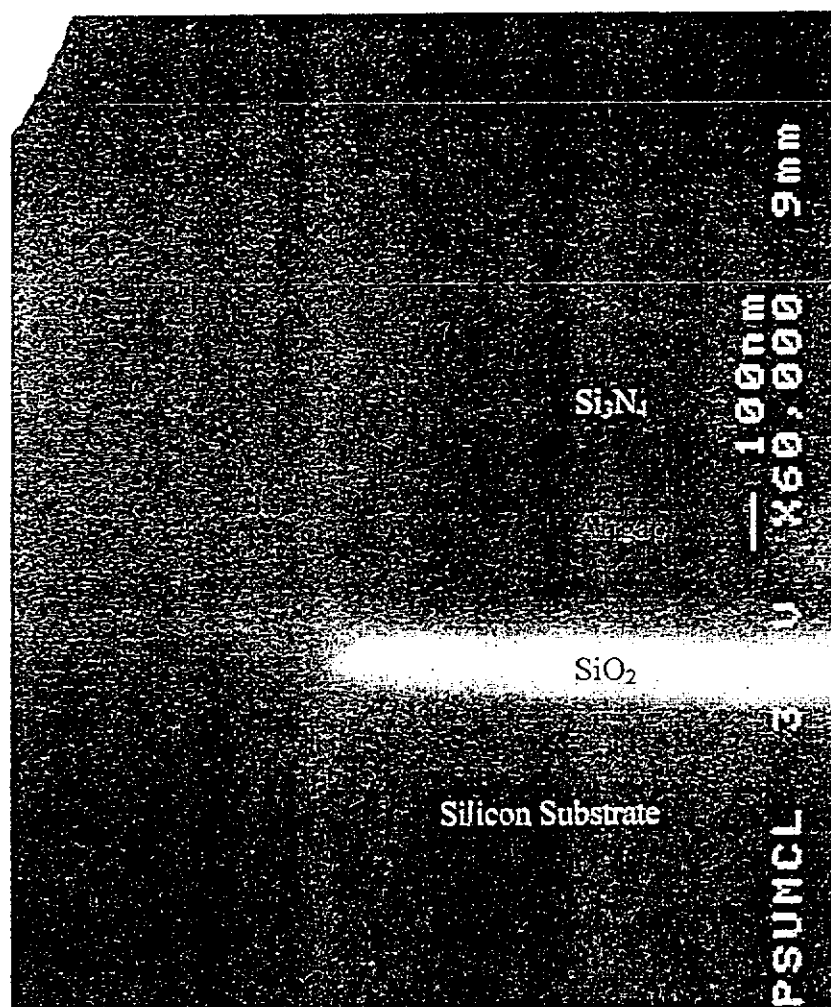
(g) Sacrificial layer etching and trench creation



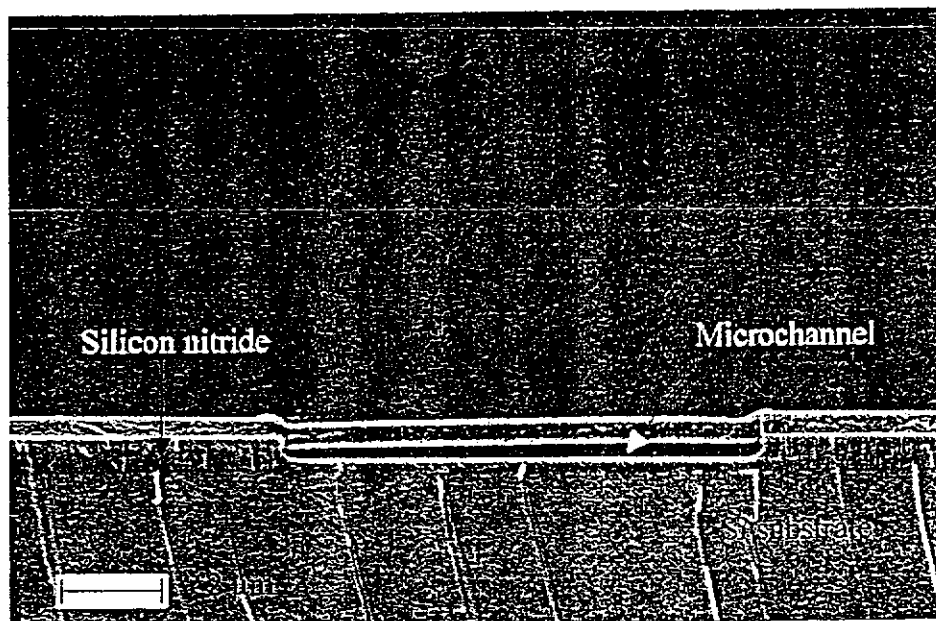
(h) Window filling



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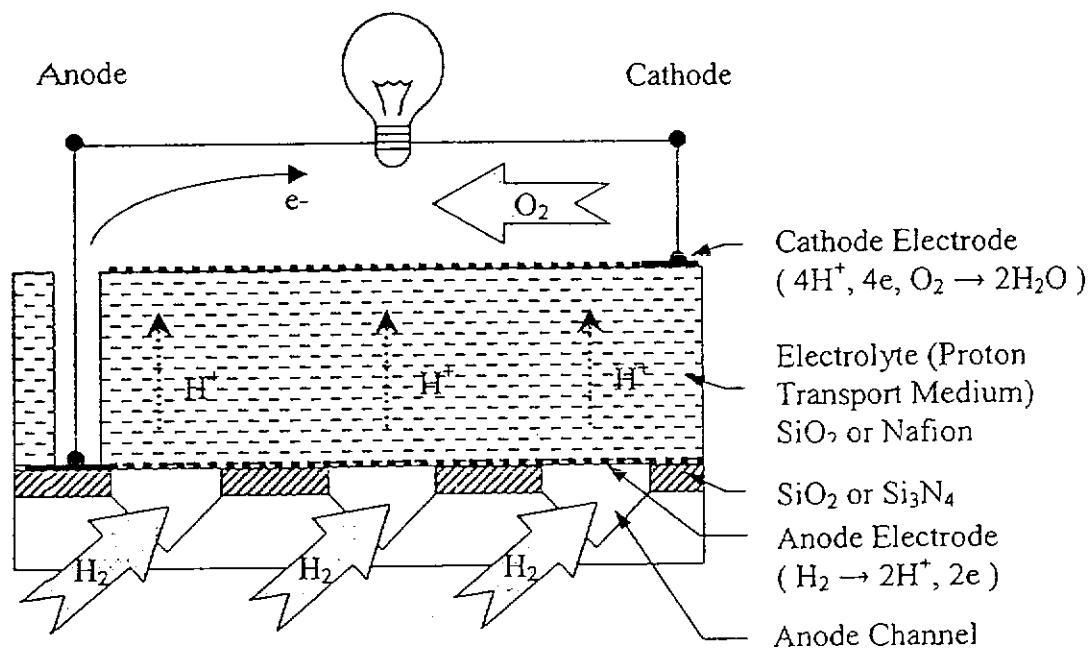


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(a)



(b)

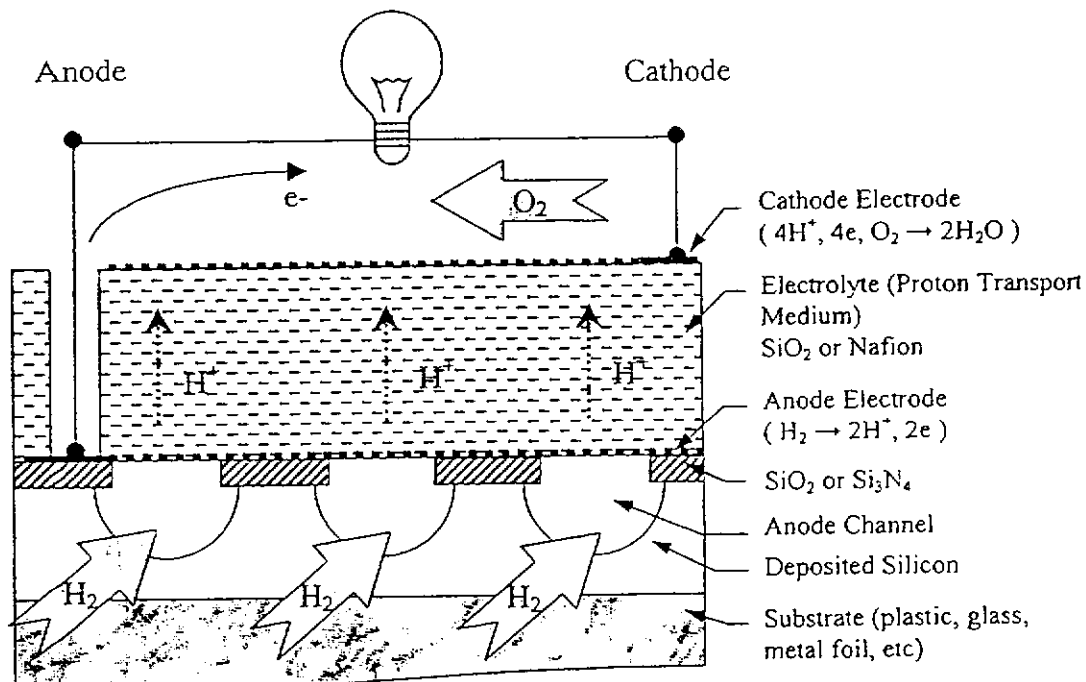
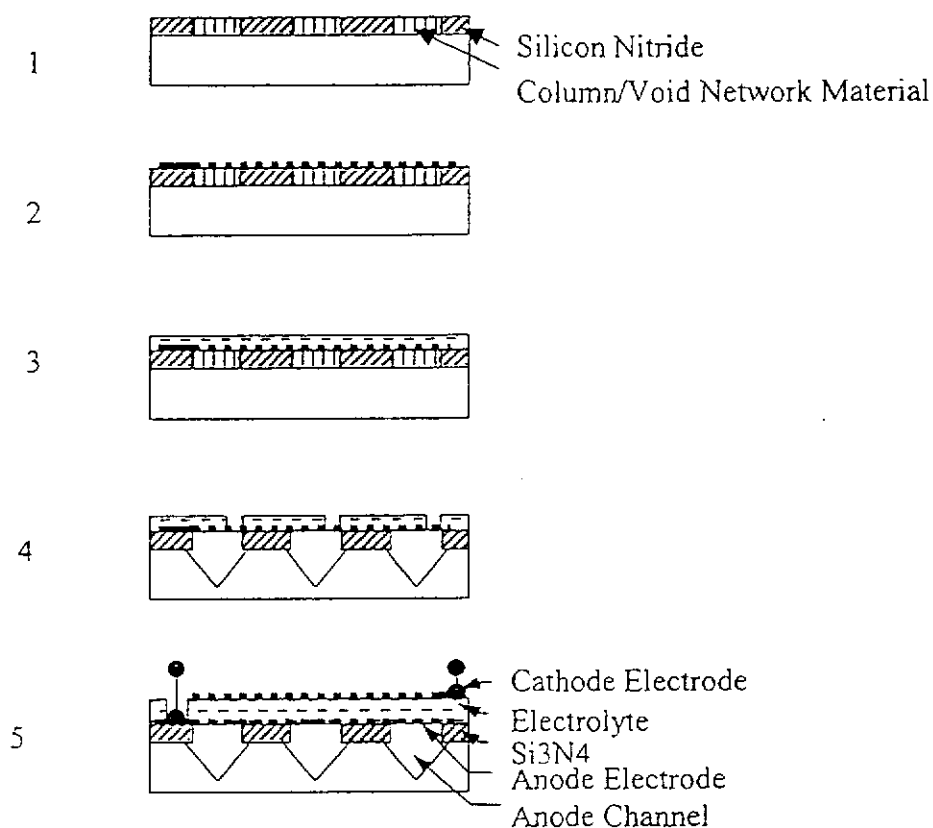


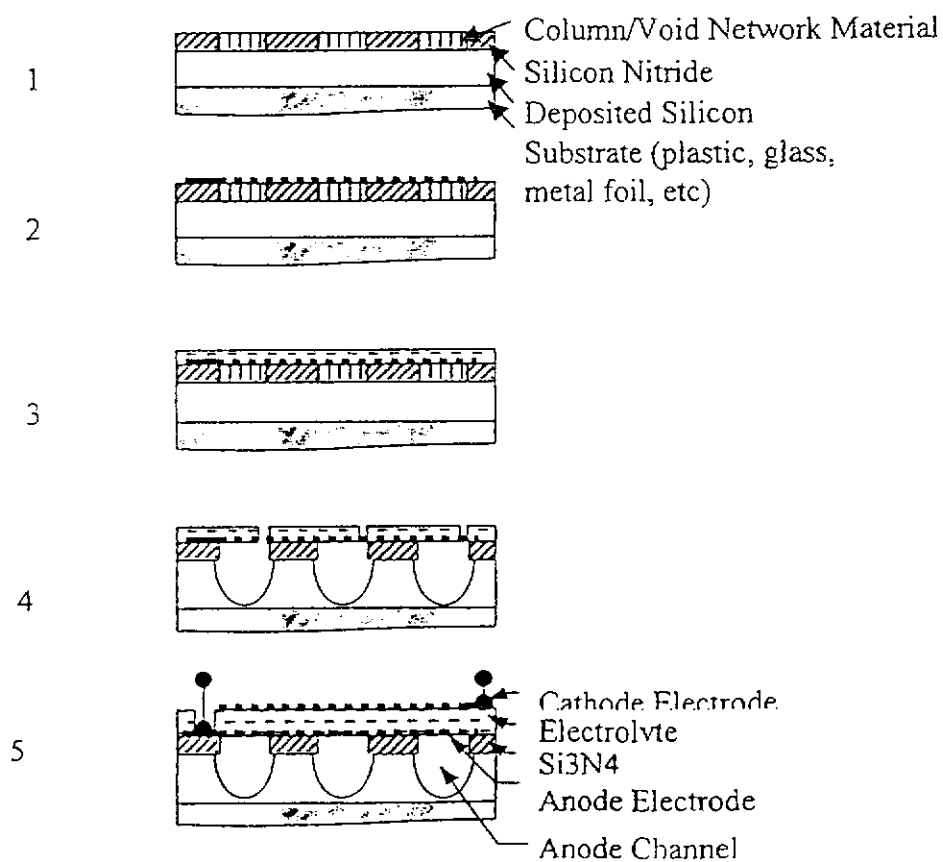
Figure 10

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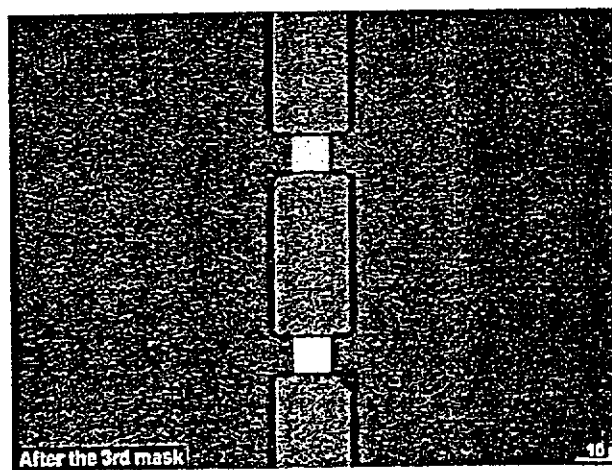
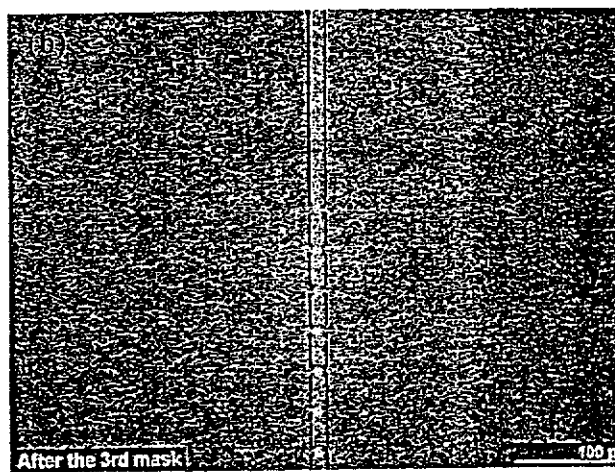
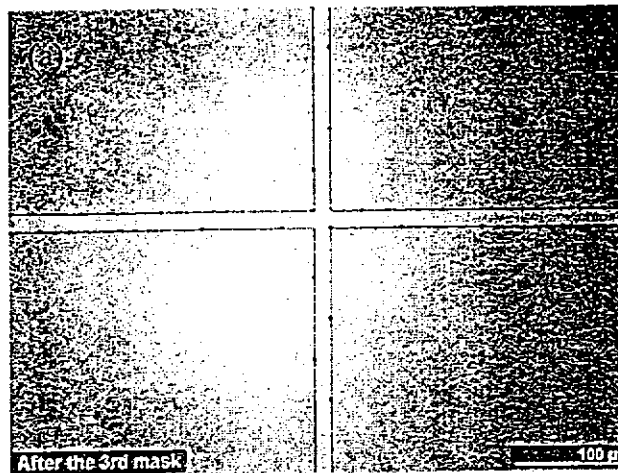
(a)



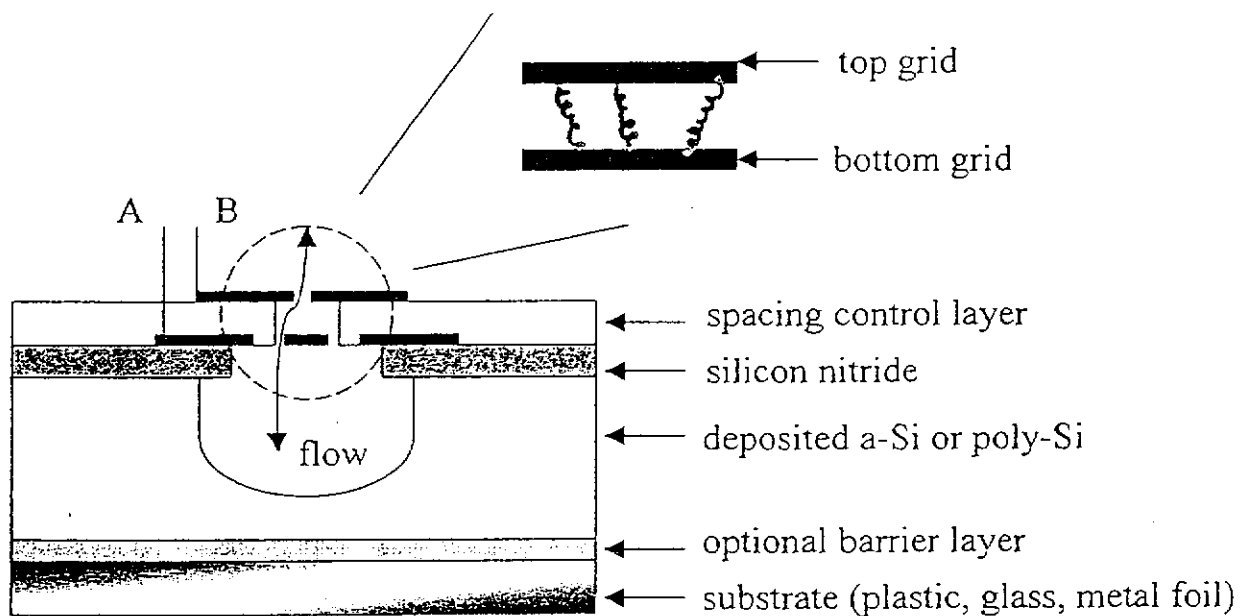
(b)



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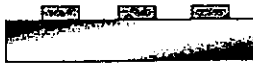
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(a) Cr/Au deposition



(b) Lithography and etching



(c) Column/void network material deposition



(d) Contact tip etching



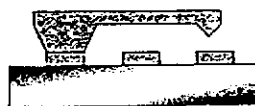
(e) Beam support etching



(f) Lithography



(g) Au deposition



(h) Column/void network material etching