

Title (en)  
PROCESS TO MODIFY WORK FUNCTIONS USING ION IMPLANTATION

Title (de)  
VERFAHREN ZUM MODIFIZIEREN DES ELEKTRONENAustrittSPOTENTIALS UNTER VERWENDUNG VON IONENIMPLANTATION

Title (fr)  
PROCEDE PERMETTANT DE MODIFIER LE TRAVAIL D'EXTRACTION PAR IMPLANTATION D'ION

Publication  
**EP 0904159 A4 20020227 (EN)**

Application  
**EP 97922305 A 19970328**

Priority  

- US 9706168 W 19970328
- US 62525996 A 19960401

Abstract (en)  
[origin: WO9736693A1] The work function of electron emitters can be modified by forming a modifying layer at the surface using low energy ion implantation, in a controlled environment, placing chosen elements below the surface of electron emitters as Cs implanted in Si(100) at four different doses illustrates. Sometimes implanted species are deep enough that they do not react with the atmosphere during subsequent low-temperature processing. Then, species implanted in the emitting surfaces are segregated using elevated temperature treatment of the emitters in vacuum and/or reactive gases. The implanted ions modify the work function at the surface, via thin layers of the implanted species on top of the emitter surfaces, or compounds or alloy layers at the surface of the emitters. Depending on the implanted species, the initial emitter material, and the environment, these layers can either increase or decrease the work function of the emitter.

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IPC 8 full level  
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CPC (source: EP)  
**C23C 14/48** (2013.01); **C23C 14/5806** (2013.01); **H01J 9/022** (2013.01); **H01J 2201/30426** (2013.01)

Citation (search report)  

- No further relevant documents disclosed
- See references of WO 9736693A1

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FR

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