

**PROCESS FOR DEPOSITING A LAYER OF MATERIAL ON A SUBSTRATE
AND A PLATING SYSTEM**

5

Abstract of the Disclosure

An electroplating system (30) and process makes electrical current density across a semiconductor device substrate (20) surface more uniform during plating to allow for a more uniform or tailored deposition of a conductive material. The electrical
10 current density modifiers (364 and 37) reduce the electrical current density near the edge of the substrate (20). By reducing the current density near the edge of the substrate (20), the plating becomes more uniform or can be tailored so that slightly
15 more material is plated near the center of the substrate (20). The system can also be modified so that the material that electrical current density modifier portions (364) on structures (36) can be removed without having to disassemble any portion of the head (35) or otherwise remove the structures (36) from the system.
20 This in-situ cleaning reduces the amount of equipment downtime, increases equipment lifetime, and reduces particle counts.

FIG 3 to accompany abstract.