



[54] METHOD FOR SPUTTERING COMPOUNDS ON A SUBSTRATE

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[58] Field of Search 204/192.13, 192.15, 204/192.22, 192.23, 192.25, 298.03, 298.07, 298.08, 298.14, 298.26, 298.06, 192.16

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(List continued on next page.)

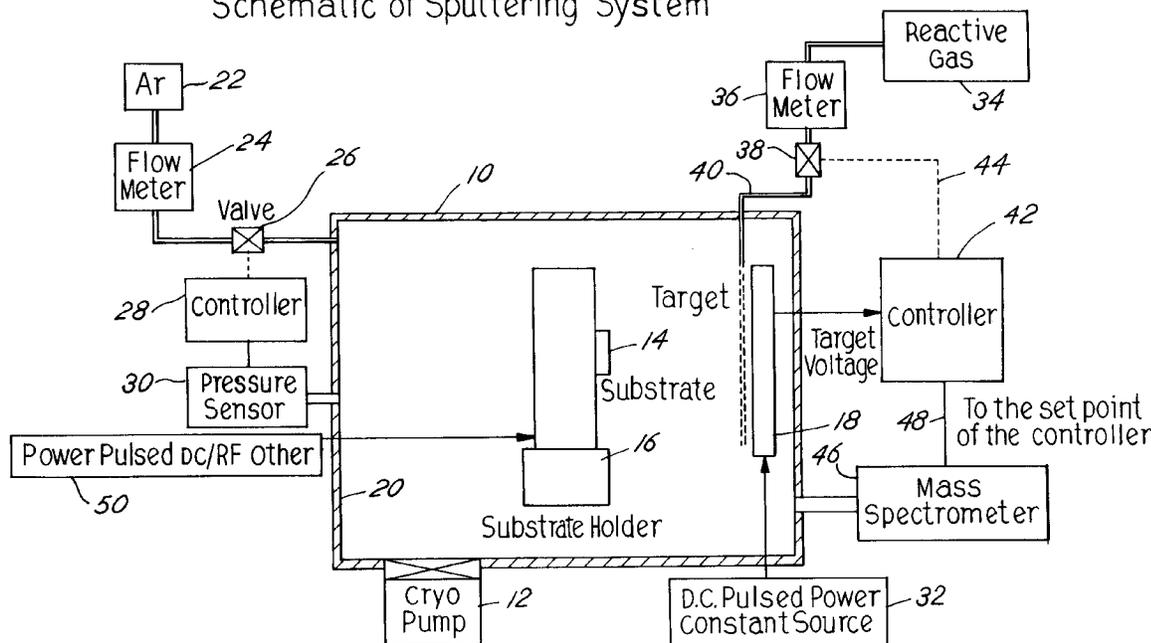
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[57] ABSTRACT

A method and apparatus for monitoring and controlling deposition of metal, insulating compounds or other compounds on a substrate by sputtering techniques includes maintaining pulsed, constant, direct current power to the target, sensing the voltage of the target material used in the process, simultaneously rapidly sensing the partial pressure of the reactive gas, and simultaneously biasing the substrate to activate the reactive gas or otherwise energizing the reactive gas in the vicinity of the substrate. An apparatus for practicing the invention is also disclosed.

13 Claims, 5 Drawing Sheets

Schematic of Sputtering System



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FIG. 1
Schematic of Sputtering System

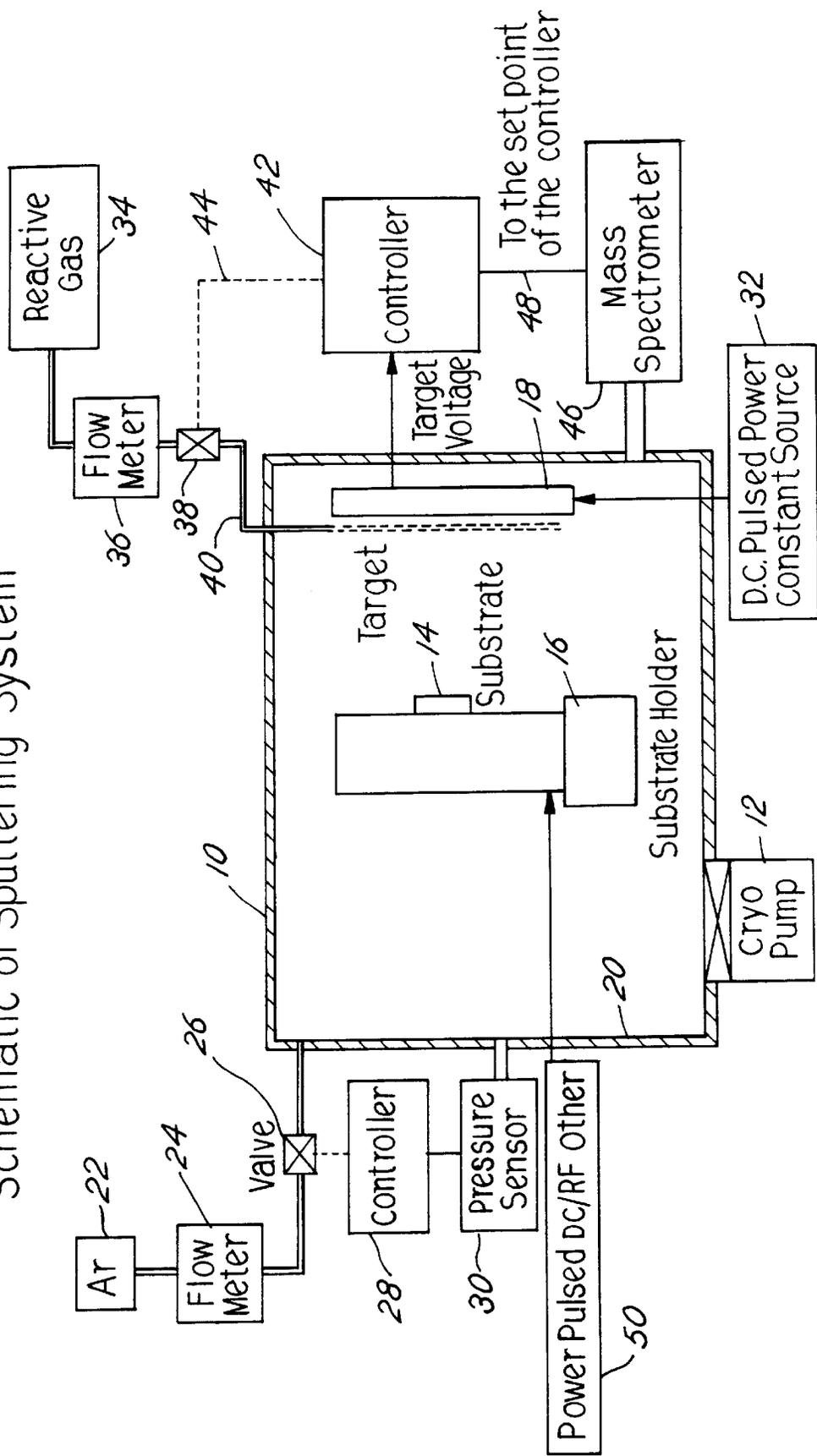


FIG. 2

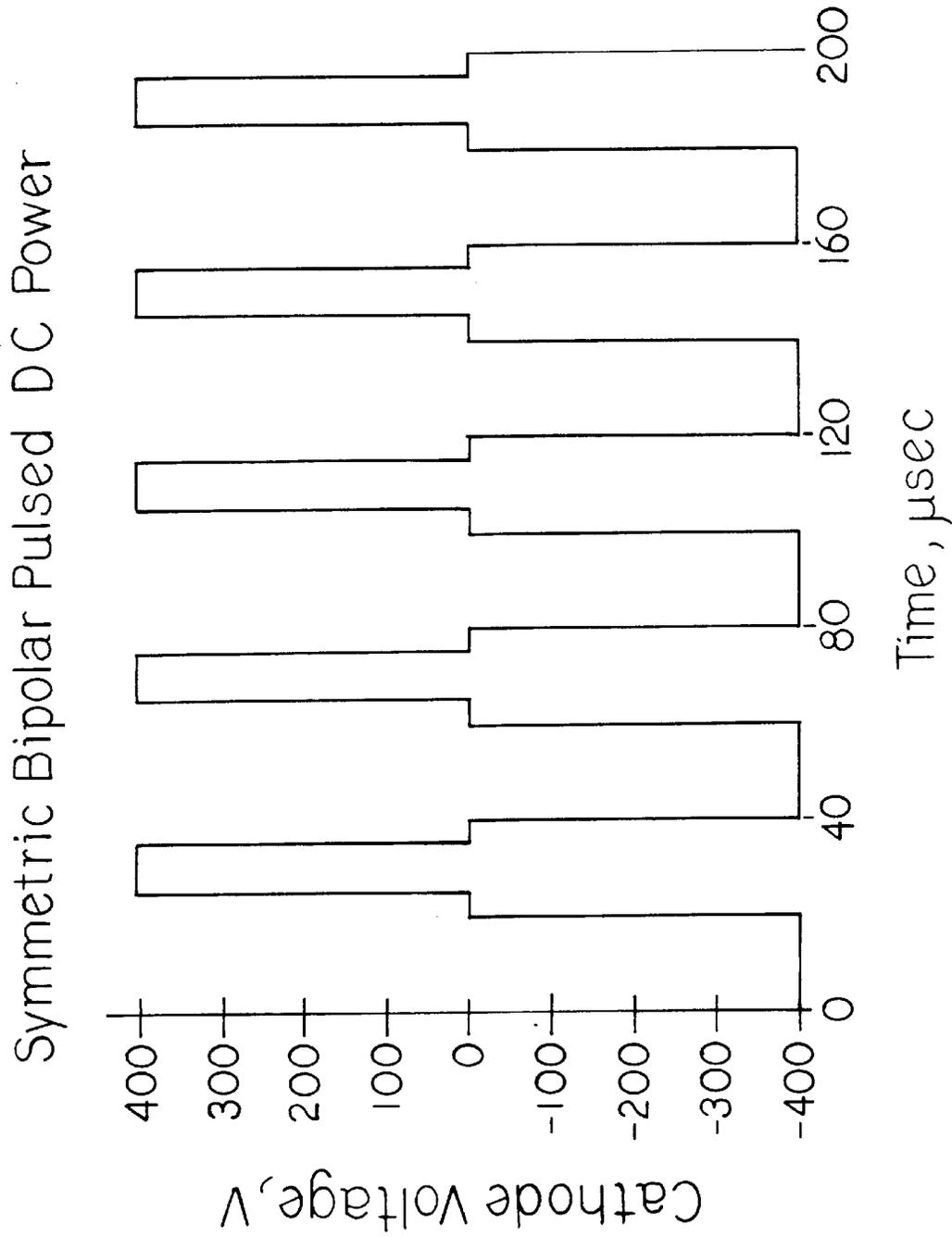
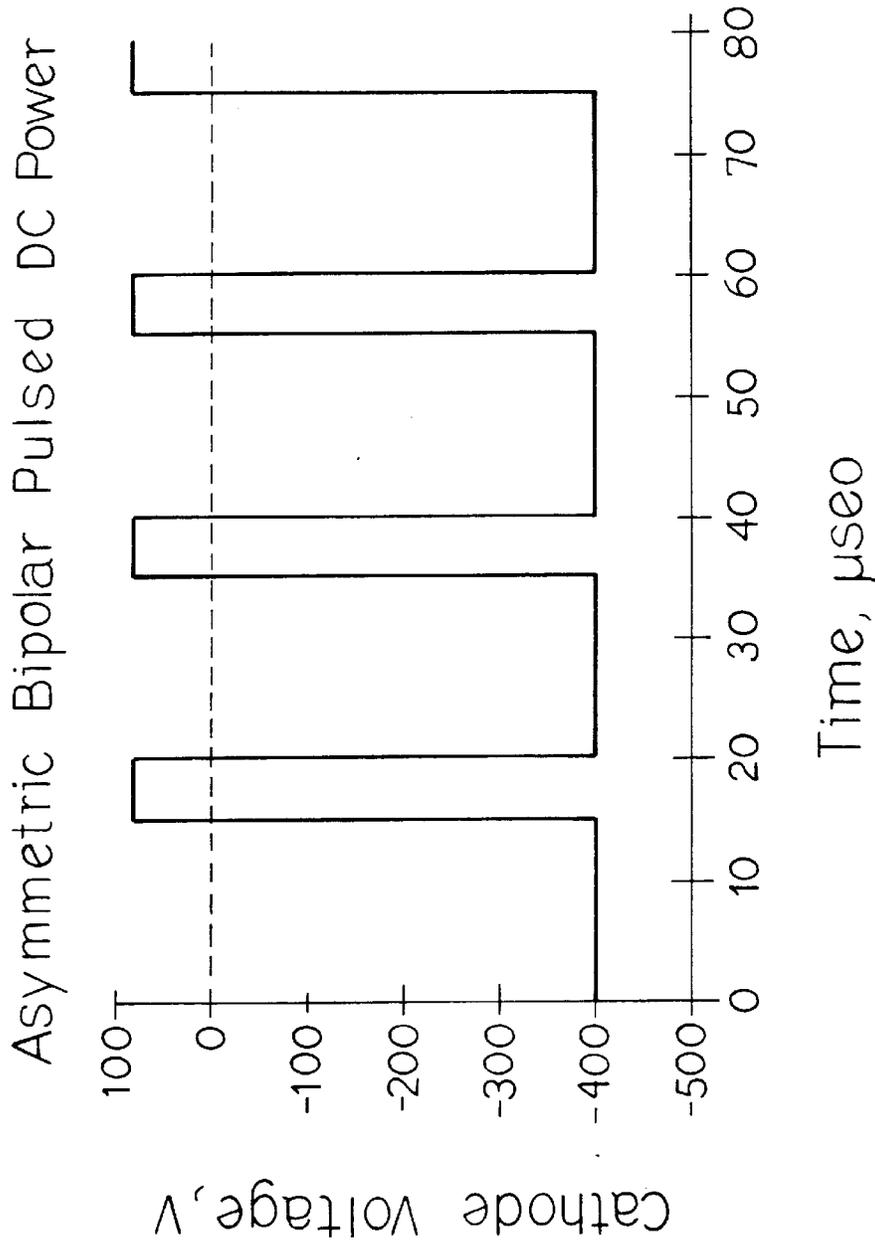


FIG. 3



Source : J. Sellers, "Asymmetric Bipolar Pulsed DC,"
ENI Tech Note, ENI, Rochester, NY

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