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Flamm

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- (54) **MULTI-TEMPERATURE PROCESSING**
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- (21) Appl. No.: **10/439,245**
- (22) Filed: **May 14, 2003**

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Related U.S. Patent Documents

- Reissue of:
- (64) Patent No.: **6,231,776**
 - Issued: **May 15, 2001**
 - Appl. No.: **09/151,163**
 - Filed: **Sep. 10, 1998**

- U.S. Applications:
- (63) Continuation-in-part of application No. 08/567,224, filed on Dec. 4, 1995, now abandoned.
 - (60) Provisional application No. 60/058,650, filed on Sep. 11, 1997.

- (51) **Int. Cl.**
H05H 1/00 (2006.01)
H01L 21/302 (2006.01)

- (52) **U.S. Cl.** **216/59**; 216/67; 216/68; 216/74; 438/714; 438/715; 204/192.32; 156/345.52; 156/345.53
- (58) **Field of Classification Search** 438/715, 438/719, 721, 725, 737, 738; 216/41, 49, 216/63-67, 75, 79; 156/345.27, 345.52, 345.53
See application file for complete search history.

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(57) **ABSTRACT**

The present invention provides a technique, including a method and apparatus, for etching a substrate in the manufacture of a device. The apparatus includes a chamber and a substrate holder disposed in the chamber. The substrate holder has a selected thermal mass to facilitate changing the temperature of the substrate to be etched during etching processes. That is, the selected thermal mass of the substrate holder allows for a change from a first temperature to a second temperature within a characteristic time period to process a film. The present technique can, for example, provide different processing temperatures during an etching process or the like.

59 Claims, 15 Drawing Sheets

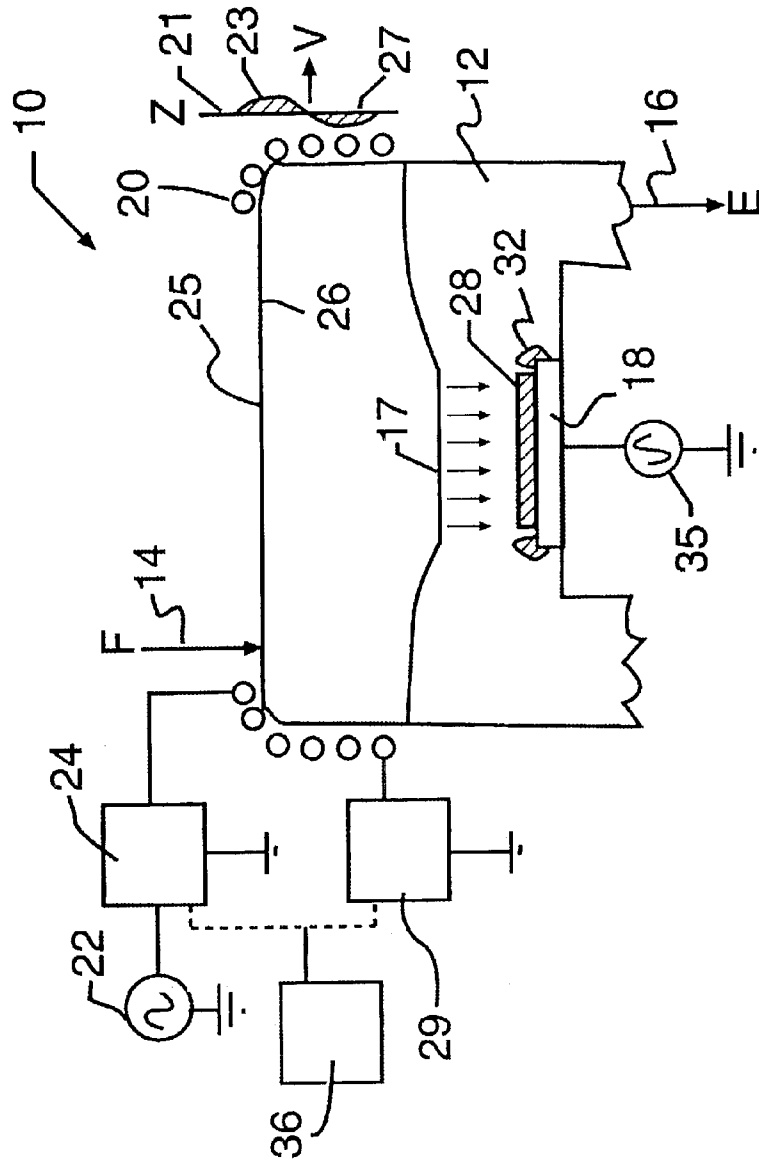


FIG. 1

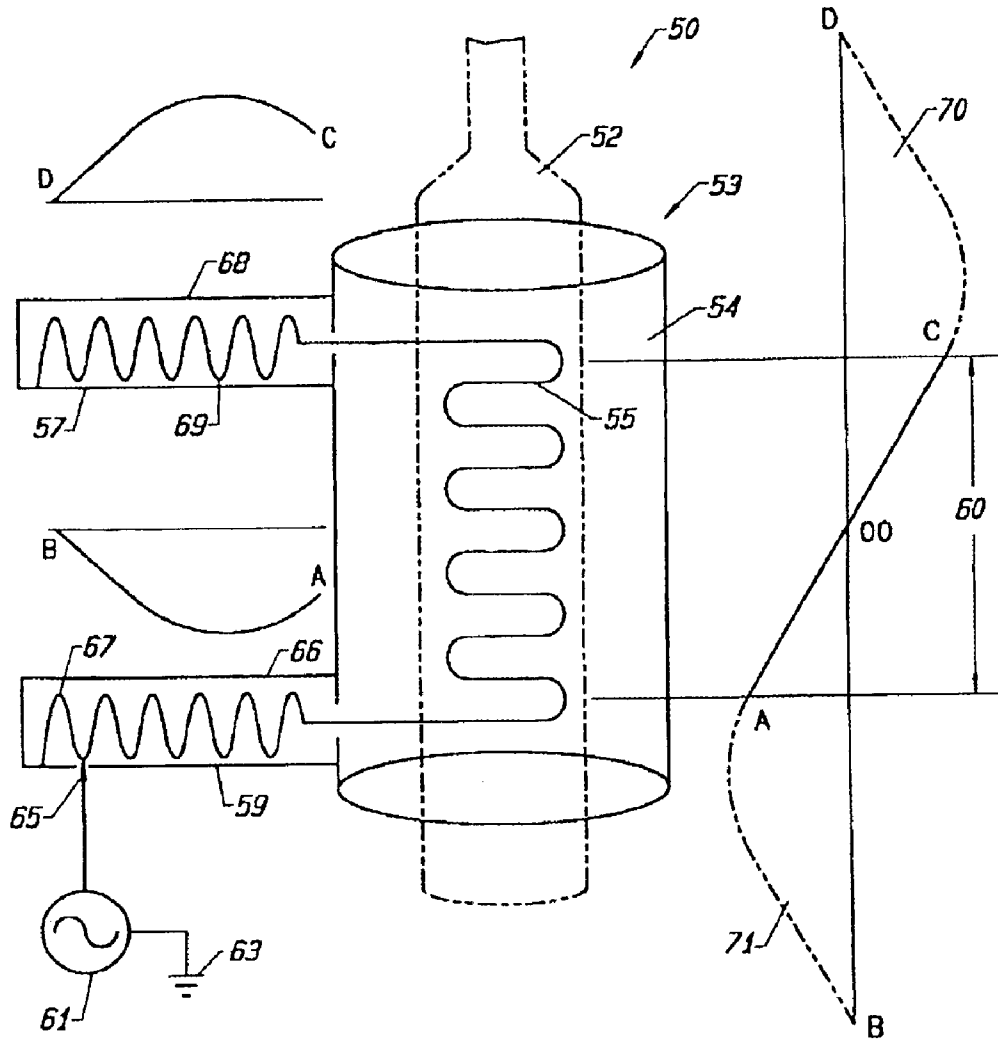


FIG. 2A

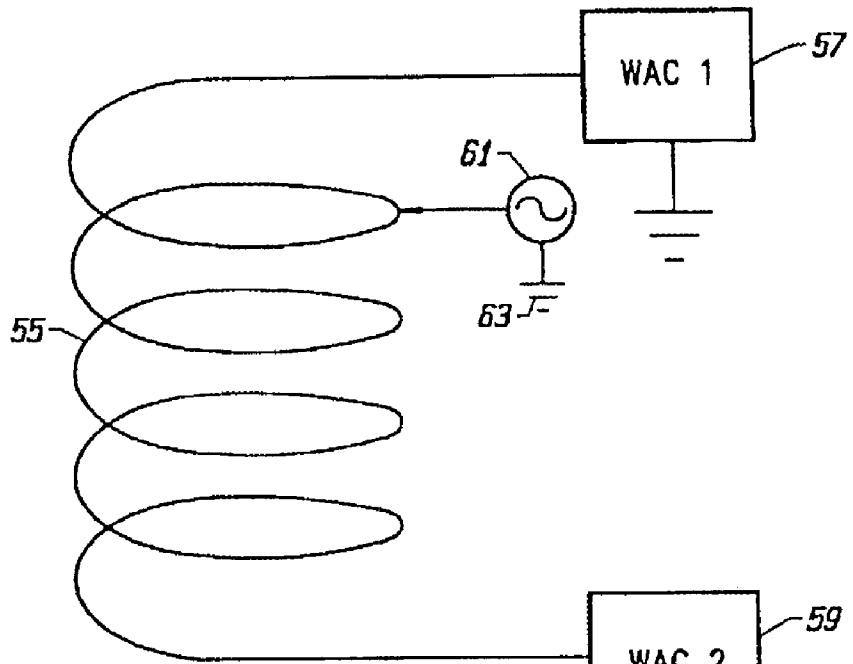


FIG. 2B

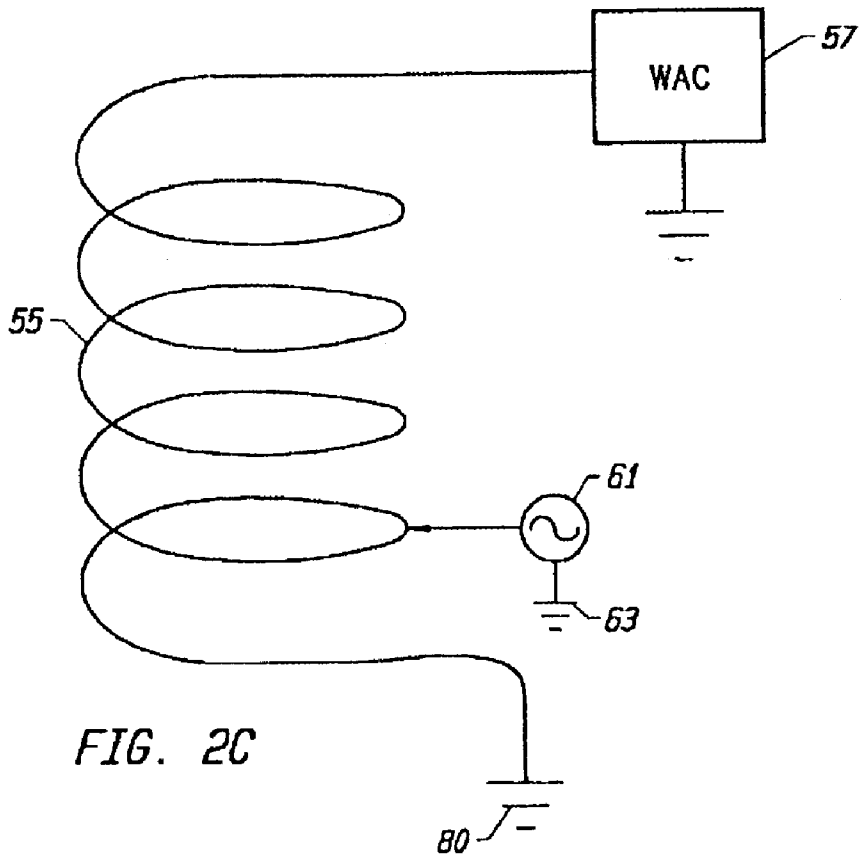


FIG. 2C

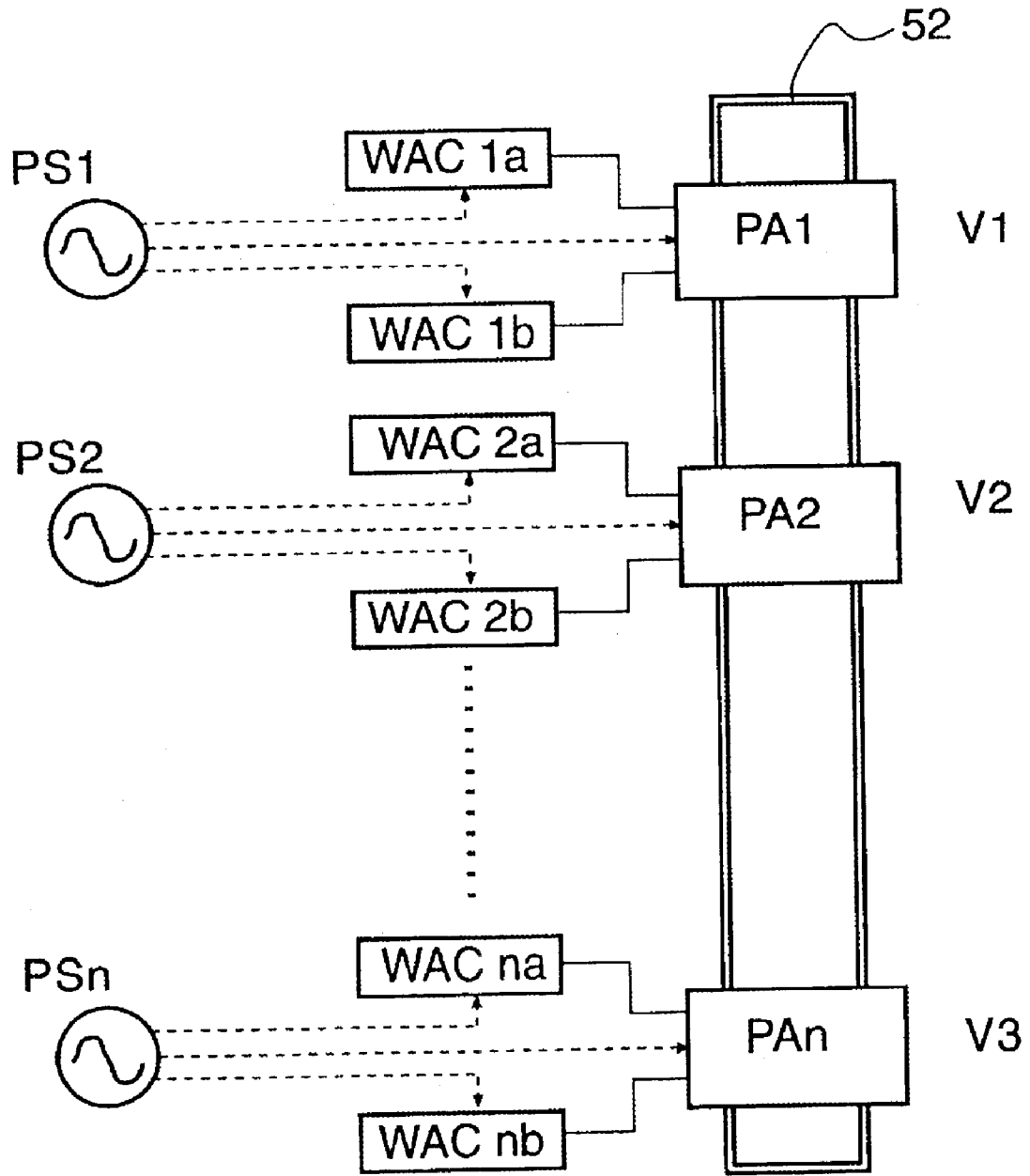


Fig. 2D

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