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(54) **MICROFEATURE WORKPIECE
PROCESSING APPARATUS AND METHODS
FOR BATCH DEPOSITION OF MATERIALS
ON MICROFEATURE WORKPIECES**

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See application file for complete search history.

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(57) **ABSTRACT**

The present disclosure describes apparatus and methods for processing microfeature workpieces, e.g., by depositing material on a microelectronic semiconductor using atomic layer deposition. Some of these apparatus include microfeature workpiece holders that include gas distributors. One exemplary implementation provides a microfeature workpiece holder adapted to hold a plurality of microfeature workpieces. This workpiece holder includes a plurality of workpiece supports and a gas distributor. The workpiece supports are adapted to support a plurality of microfeature workpieces in a spaced-apart relationship to define a process space adjacent a surface of each microfeature workpiece. The gas distributor includes an inlet and a plurality of outlets, with each of the outlets positioned to direct a flow of process gas into one of the process spaces.

20 Claims, 12 Drawing Sheets

