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(71) Applicant: **APPLIED MATERIALS, INC.** [US/US]; P.O. Box 450A, Santa Clara, CA 95052 (US).

(72) Inventors: **NALLAN, Padmapani**; 2200 Pettigrew Drive, San Jose, CA 95148 (US). **ZHANG, Tong**; 870 Loma Verde, Palo Alto, CA 94303 (US).

(74) Agents: **BERNADICOU, Michael, A.** et al.; Blakely, Sokoloff, Taylor & Zafman LLP, 7th Floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025 (US).

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(54) Title: METHOD OF ETCHING TITANIUM NITRIDE

(57) Abstract: The present disclosure pertains to a method of plasma etching a titanium nitride layer within a semiconductor structure. In many embodiments of the method, the titanium nitride layer is etched using a source gas comprising chlorine and a fluorocarbon. Also disclosed herein is a two-step method of plasma etching a titanium nitride gate consisting of a main etch step, followed by an overetch step which utilizes a source gas comprising chlorine and a bromine-containing compound, to etch a portion of the titanium nitride layer which was not etched in the main etch step. The chlorine/bromine overetch chemistry can be used in conjunction with a chlorine/fluorocarbon main etch chemistry, or with any other titanium nitride etch chemistry known in the art.