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(19) **United States**(12) **Patent Application Publication****Rayner, JR. et al.**(10) **Pub. No.: US 2023/0230802 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **ULTRA HIGH PURITY CONDITIONS FOR
ATOMIC SCALE PROCESSING**(71) Applicant: **Kurt J. Lesker Company**, Jefferson
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Edward Carlsen**, Canonsburg, PA (US)(21) Appl. No.: **18/178,664**(22) Filed: **Mar. 6, 2023****Related U.S. Application Data**(63) Continuation of application No. 17/288,981, filed on
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(57)

ABSTRACT

An apparatus for atomic scale processing is provided. The apparatus may include a reactor and an inductively coupled plasma source. The reactor may have inner and outer surfaces such that a portion of the inner surfaces define an internal volume of the reactor. The internal volume of the reactor may contain a fixture assembly to support a substrate wherein the partial pressure of each background impurity within the internal volume may be below 10^{-6} Torr to reduce the role of said impurities in surface reactions during atomic scale processing.

