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(54) **APPARATUS FOR PRODUCING NANO-PARTICLES OF MOLYBDENUM OXIDE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 46 days.

This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search** 422/198, 422/207, 244, 108; 266/148, 146

See application file for complete search history.

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(57) **ABSTRACT**

Apparatus for producing nano-particles includes a furnace defining a vapor region therein. A precipitation conduit having an inlet end and an outlet end is positioned with respect to the furnace so that the inlet end is open to the vapor region. A quench fluid supply apparatus supplies quench fluid in a gas state and quench fluid in a liquid state. A quench fluid port positioned within the precipitation conduit is fluidically connected to the quench fluid supply apparatus so that an inlet to the quench fluid port receives quench fluid in the gas state and quench fluid in the liquid state. The quench fluid port provides a quench fluid stream to the precipitation conduit to precipitate nano-particles within the precipitation conduit. A product collection apparatus connected to the outlet end of the precipitation conduit collects nano-particles produced within the precipitation conduit.

5 Claims, 5 Drawing Sheets