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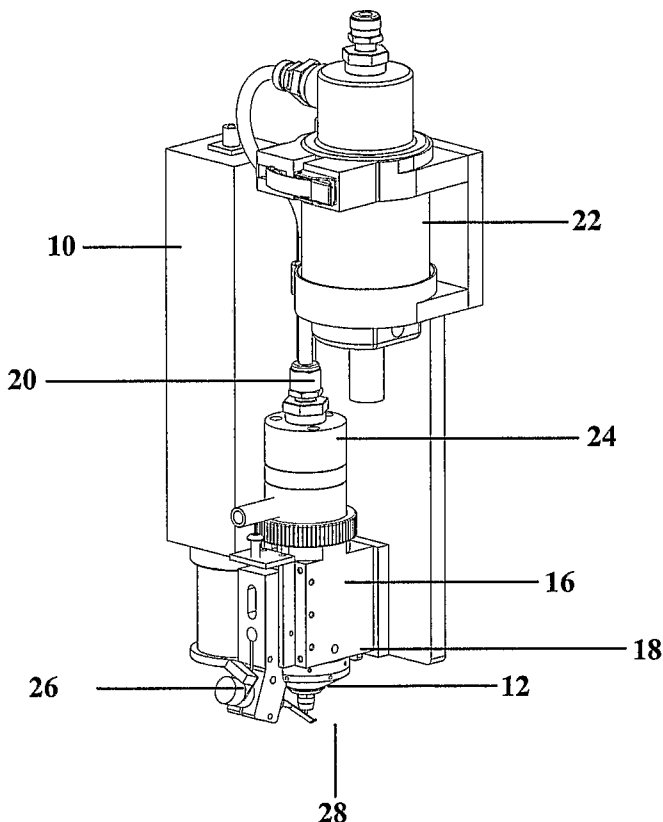
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(54) Title: LASER PROCESSING FOR HEAT-SENSITIVE MESOSCALE DEPOSITION



(57) Abstract: Methods and apparatus for Maskless Mesoscale Material Deposition (M³DTM) processes are taught, using an ultrasonic transducer or pneumatic nebulizer (22) to produce an aerosol with a stream thereof directed at a substrate via inlet (20), optionally passing through virtual impactor (24) to reduce gas volume or bypass to flowhead (12) through heater assembly (16), which may remove solvent or modify viscosity. Material shutter assembly (26) with mechanical shutter (28) are provided at the flowhead, and a sheath gas enters through inlet (18) to surround aerosol before exiting from the flowhead, which is used for deposition on a substrate where it is treated with a beam from laser module (10), to cause heating at or above the substrate's damage threshold.



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