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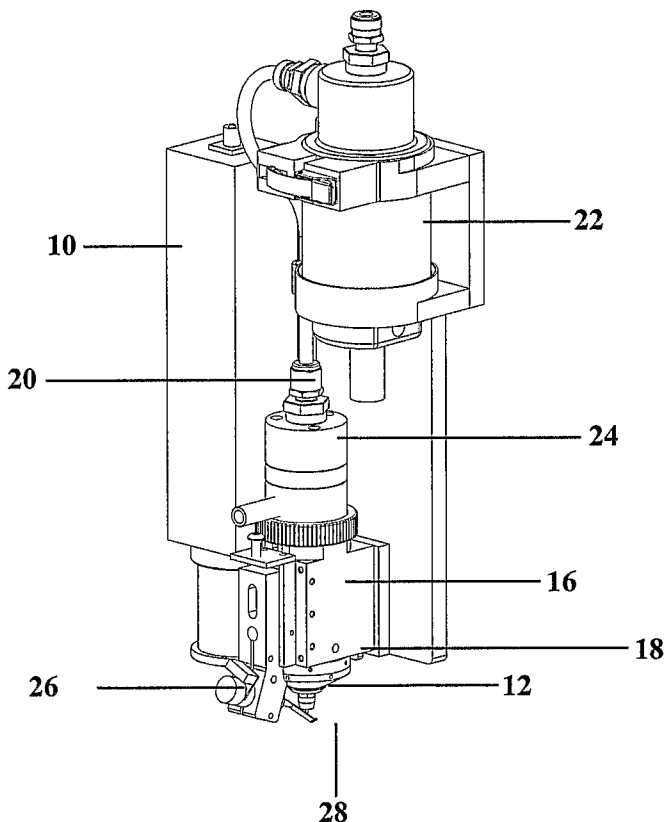
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(54) Title: LASER PROCESSING FOR HEAT-SENSITIVE MESOSCALE DEPOSITION



(57) Abstract: A method of depositing various materials onto heat-sensitive targets. Heat-sensitive targets are generally defined as targets that have thermal damage thresholds that are lower than the temperature required to process a deposited material. The invention uses precursor solutions and/or particle or colloidal suspensions, along with optional pre-deposition treatment and/or post-deposition treatment to lower the laser power required to drive the deposit to its final state. The present invention uses Maskless Mesoscale Material Deposition (M³DTM) to perform direct deposition of material onto the target in a precise, highly localized fashion. Features with linewidths as small as 4 microns may be deposited, with little or no material waste. A laser is preferably used to heat the material to process it to obtain the desired state, for example by chemical decomposition, sintering, polymerization, and the like. This laser processing may be performed in an ambient environment with laser powers of less than 100 milliwatts.

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