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- (71) Applicant: THE MITRE CORPORATION [US/US];
1820 Dolley Madison, McLean, VI 22102 (US).
- (72) Inventor: WISSNER-GROSS, Alexander, D.; 117 Had-
don Road, New Hyde Park, NY 11040 (US).
- (74) Agent: ROSENBERG, Morton, J.; Rosenberg, Klein &
Lee, Suite 101, 3458 Ellicott Center Drive, Ellicott City,
MD 21043 (US).
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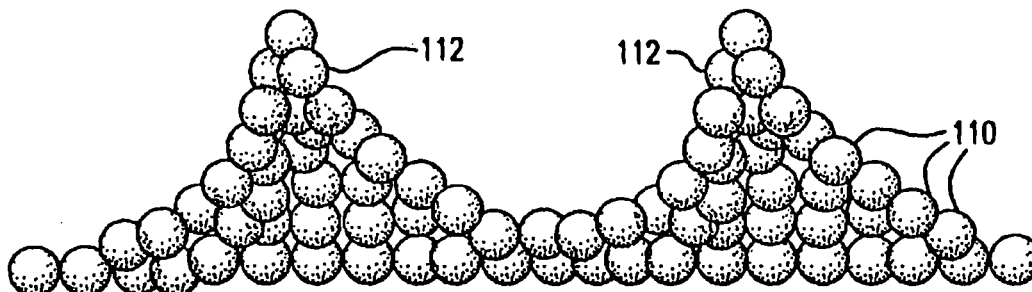


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ACTION

(54) Title: ROBOTIC MANIPULATION SYSTEM UTILIZING PATTERNED GRANULAR MOTION



(57) Abstract: A system (100, 100', 100'') and method for robotic manipulation of objects (130) is provided wherein particulates (110, 110') are agitated by the transfer of energy thereto to establish patterned granular motion of the particulates (110, 110'). The patterned granular motion of the particulates (110, 110') forms standing waves (112). The objects (130) align themselves with the standing waves (112) and thus are dynamically arranged in a configuration established by the location of the standing waves (112). The location of the standing waves (112) can be predetermined by controlling the waveform of the signals applied to the energy application system (140). The predetermined waveforms are supplied from the signal source (150, 154) to the energy application system (140).

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