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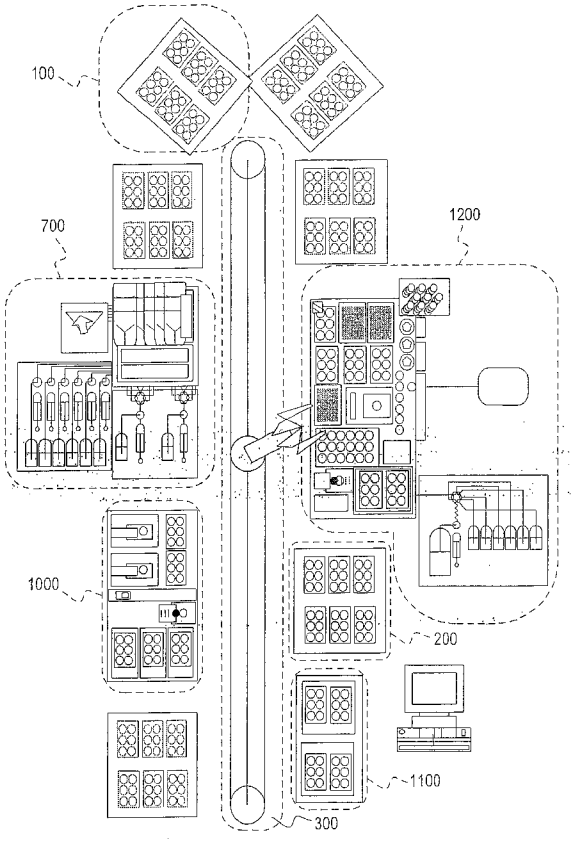
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(54) Title: PREPARATION AND CHARACTERIZATION OF FORMULATIONS IN A HIGH THROUGHPUT MODE



(57) Abstract: The invention is an automated robotic system for the production and testing of formulations at a very high throughput. It is an integrated system of hardware and software capable of preparing and evaluating hundreds of emulsions per day. The system can formulate aqueous solutions (SL), oil in water emulsions (EW), suspo-emulsions (SE), micro capsule suspensions (CS), micro-emulsions (ME), and suspension concentrates (SC) at the 1 ml to 25 ml scale. The system can process emulsions rapidly in an automated way and enable very flexible formulation recipes to be introduced. The system allows chemists to generate experimental samples of varying recipe and method to be conducted in parallel with projected throughput of up to 1200 formulations processed and characterized per day. Materials and consumables can be distributed from storage storage systems to the work stations where dispensing of ingredients in various states can be performed, including solids, liquids, gels, pastes, suspensions and waxes. The emulsions formed can be characterized using methods including phase diagnosis, turbidity analysis, viscosity and particle sizing using automated test equipment. An integrated module can also perform Tank Mix Compatibility testing in high throughput mode. The modular system allows future processes and tests to be added, either to a station, or as a new station. The software capability includes tracking of processes from start to finish and the integration of analytical data with the as-designed and as-formulated experimental results.

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