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(72) Inventor; and

(71) Applicant: RABANI, Eli, Michael [US/US]; 20919
Abalar St., Woodland Hills, CA 91364-4502 (US).

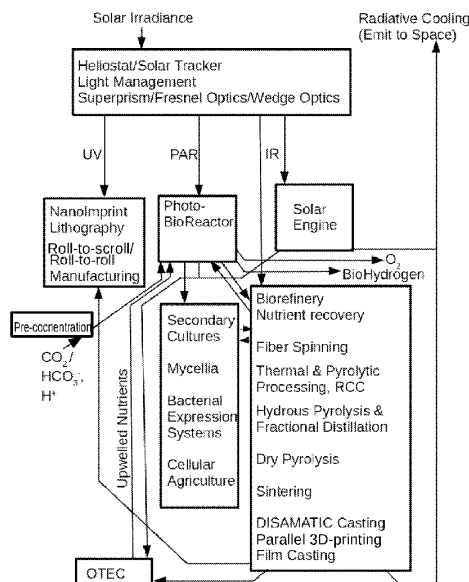
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(54) Title: SYSTEM FOR PROCESSING BIOMASS, NUTRIENT RECYCLING, AND CELLULAR AGRICULTURE

FIG. 3



(57) Abstract: The present invention provides enhanced systems for the ef-
ficient cultivation of photosynthetic organisms, methods and means for pro-
cessing the biomass thereof to useful materials, and fabricating desired arti-
cles from said useful materials, including subsystems of the present inven-
tion. Enhancements include light management for efficient utilization of in-
solated energy, thermal management for utilization of low grade waste heat
through ocean thermal energy conversion and/or radiative cooling, for pre-
venting waste heat from operations in ocean deployments from contributing
to sea- surface temperature rise and mitigation thereof, improved methods
for functional film fabrication via an improvement on roll-to-roll fabri-
cation-roll-to-scroll fabrication, processing of biomass comprising biosilica
to silicon carbide and silicon nitride nanoparticles and sintering thereof,
and integration of cultivation of primary producers with secondary cultivation
of heterotrophic cells for cultured meat production or metabolic engineered
production of desired bioproducts.

WO 2022/246013 A3

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