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(71) Applicant: **KIVERDI INC.** [US/US]; 1252 Quarry Lane,
Suite B, Pleasanton, California 94566 (US).

(72) Inventors: **REED, John**; KIVERDI, INC., 1252 Quarry
Lane, Suite B, Pleasanton, California 94566 (US). **STOUT,
David**; KIVERDI, INC., 1252 Quarry Lane, Suite B,
Pleasanton, California 94566 (US). **PEREA, Elisabeth**;
KIVERDI, INC., 1252 Quarry Lane, Suite B, Pleasanton,
California 94566 (US). **LIM, Jin-Ping**; KIVERDI,
INC., 1252 Quarry Lane, Suite B, Pleasanton, California
94566 (US). **GELLER, Jil**; KIVERDI, INC., 1252
Quarry Lane, Suite B, Pleasanton, California 94566 (US).
ROBERTSON, Dan; KIVERDI, INC., 1252 Quarry Lane,
Suite B, Pleasanton, California 94566 (US). **WILSON,
Robert**; KIVERDI, INC., 1252 Quarry Lane, Suite B,
Pleasanton, California 94566 (US). **MALHOTRA, Ripu-
daman**; KIVERDI, INC., 1252 Quarry Lane, Suite B,
Pleasanton, California 94566 (US).

(74) Agent: **JACOBSON, Jill A.**; FisherBroyles, LLP, 343 So-
quel Ave., #188, Santa Cruz, California 95062 (US).

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(54) Title: HIGH PRODUCTIVITY BIOPROCESSES FOR THE MASSIVELY SCALABLE AND ULTRA-HIGH THROUGHPUT
CONVERSION OF CO₂ INTO VALUABLE PRODUCTS

(57) Abstract: Bioreactors and methods for growing a chemoautotrophic culture of a microorganism, such as a hydrogen-oxidizing or carbon monoxide-oxidizing microorganism, are provided. The bioreactors and methods provide for enhanced growth and productivity of microorganisms that use gaseous sources of carbon and energy and provide an environment for carbon fixing to produce organic molecules of interest and/or biomass. The present bioreactors and methods achieve enhanced growth with respect to cell density, culture duration and/or growth rate, while maintaining safe operating conditions.

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