

Supplementary Materials: A Portable Servoregulation Controller to Automate CO₂ Removal in Artificial Lungs

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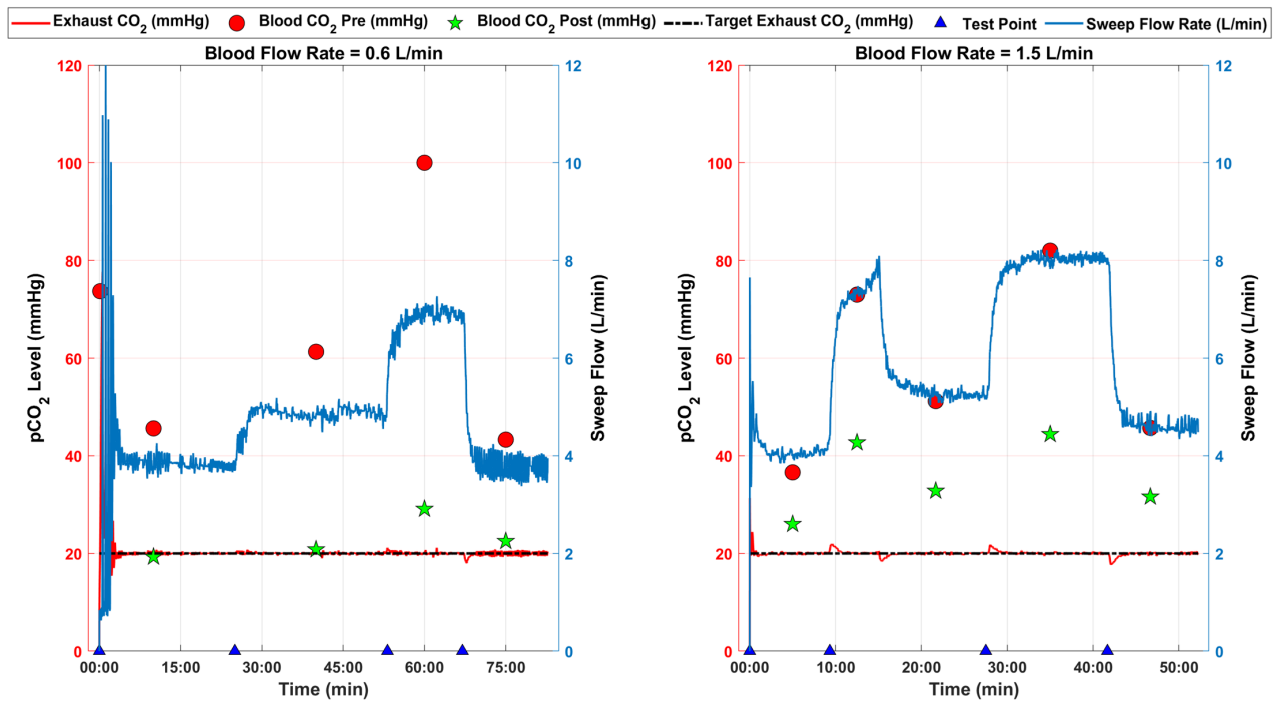


Figure S1. Data from *in vitro* studies at Artificial Lung(AL) blood flow rate of 0.6 L/min and 1.5 L/min. The target exhaust CO₂ level was maintained at 20 mmHg. The blue arrows represent the time points when the inlet blood pCO₂ levels were changed to challenge the tuning of the PID controller.

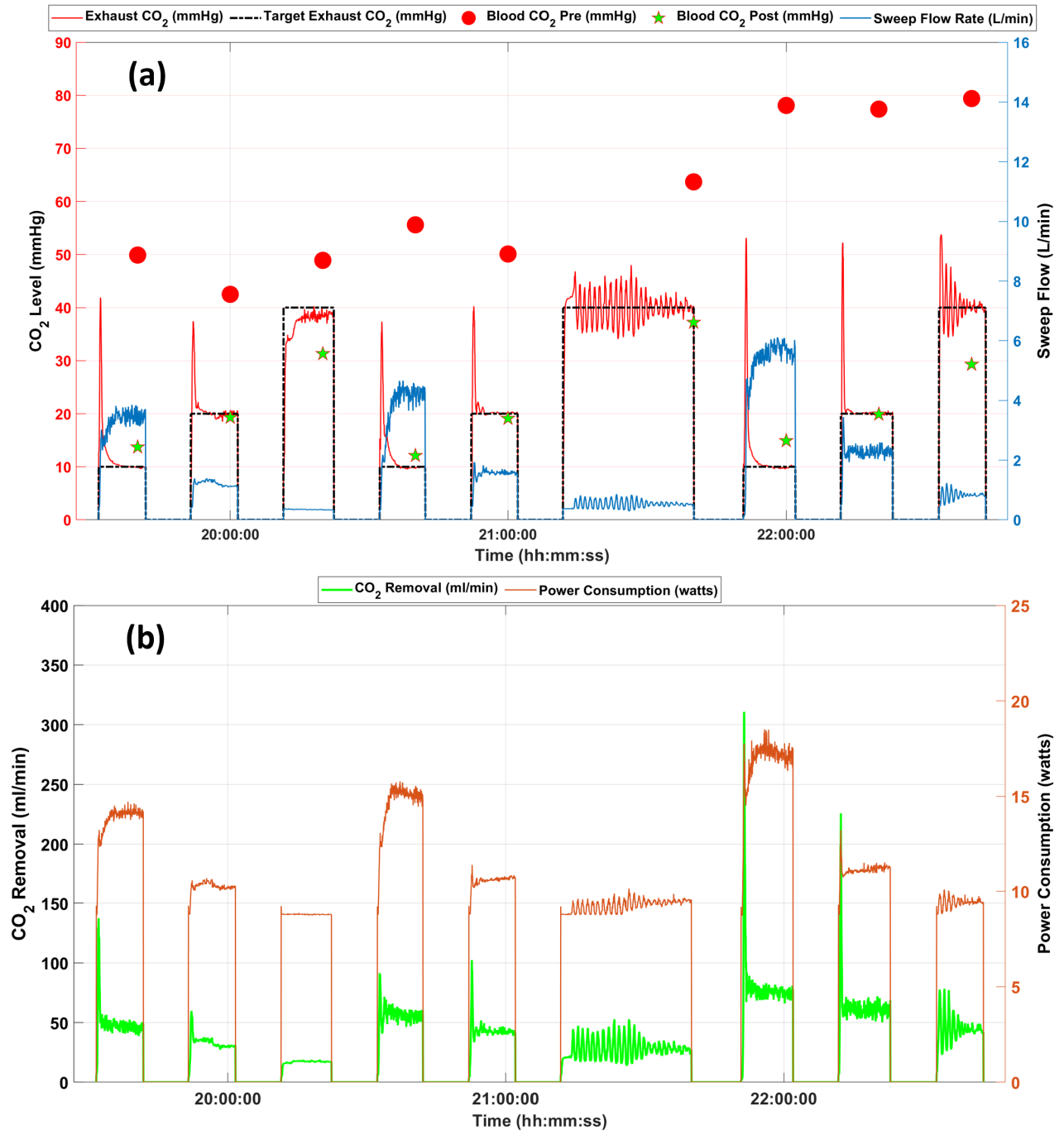


Figure S2. Raw data from *in vitro* studies at AL blood flow rate of 0.5 L/min showing (a) exhaust CO₂ levels, target exhaust CO₂ levels, sweep flow rates. (b) instantaneous CO₂ removal rate and system power consumption.

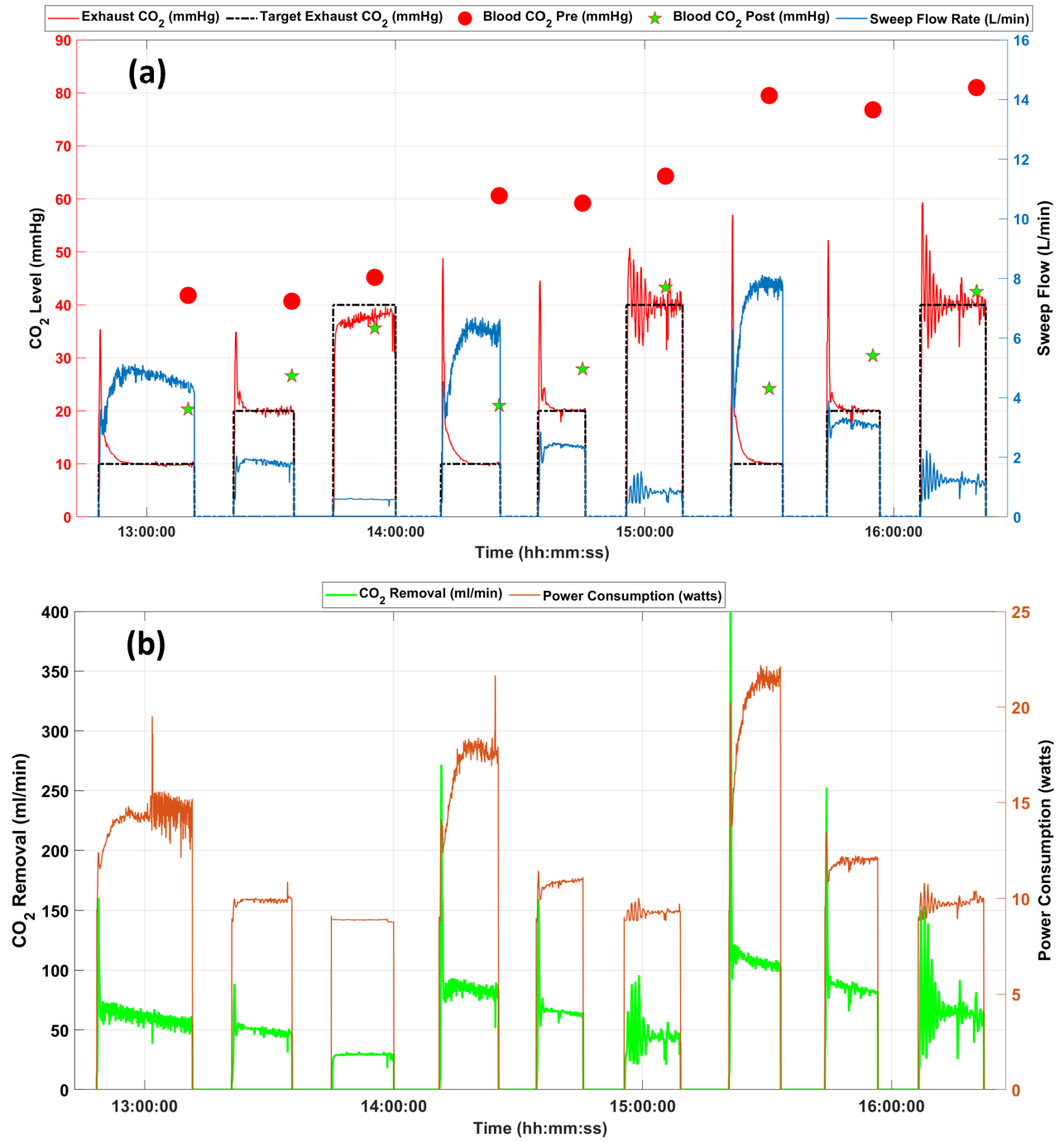


Figure S3. Raw data from *in vitro* studies at AL blood flow rate of 1.0 L/min showing (a) exhaust CO₂ levels, target exhaust CO₂ levels, sweep flow rates. (b) instantaneous CO₂ removal rate and system power consumption.

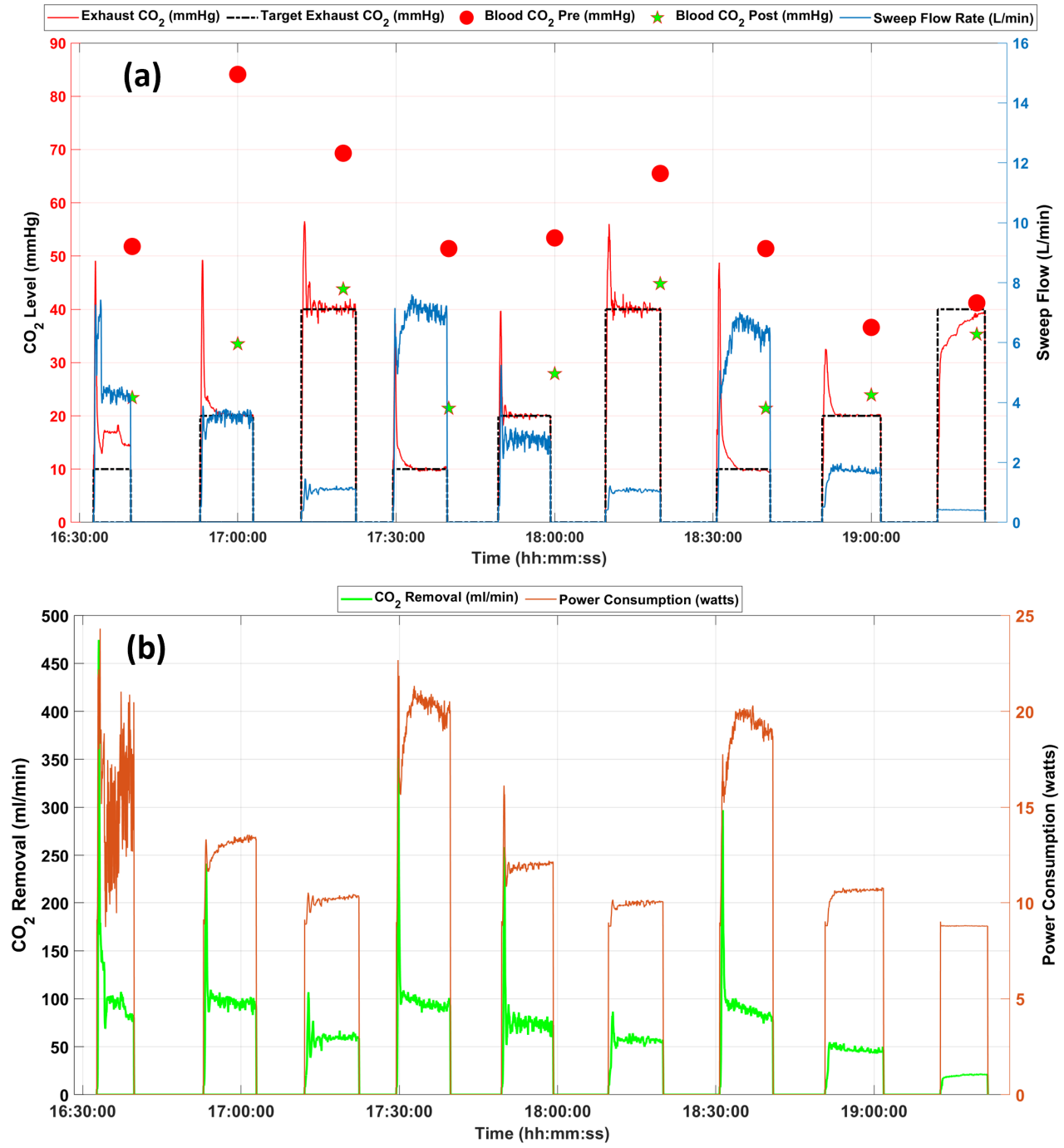


Figure S4. Raw data from *in vitro* studies at AL blood flow rate of 1.5 L/min showing (a) exhaust CO₂ levels, target exhaust CO₂ levels, sweep flow rates. (b) instantaneous CO₂ removal rate and system power consumption.