SUPPLEMENTARY INFORMATION

Binuclear Rhenium(I)-Complexes for the Photocatalytic Reduction of CO_2

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Determination of the Reaction Rate of (dmb)Re(CO)$_3$Br (see manuscript Figure 10)

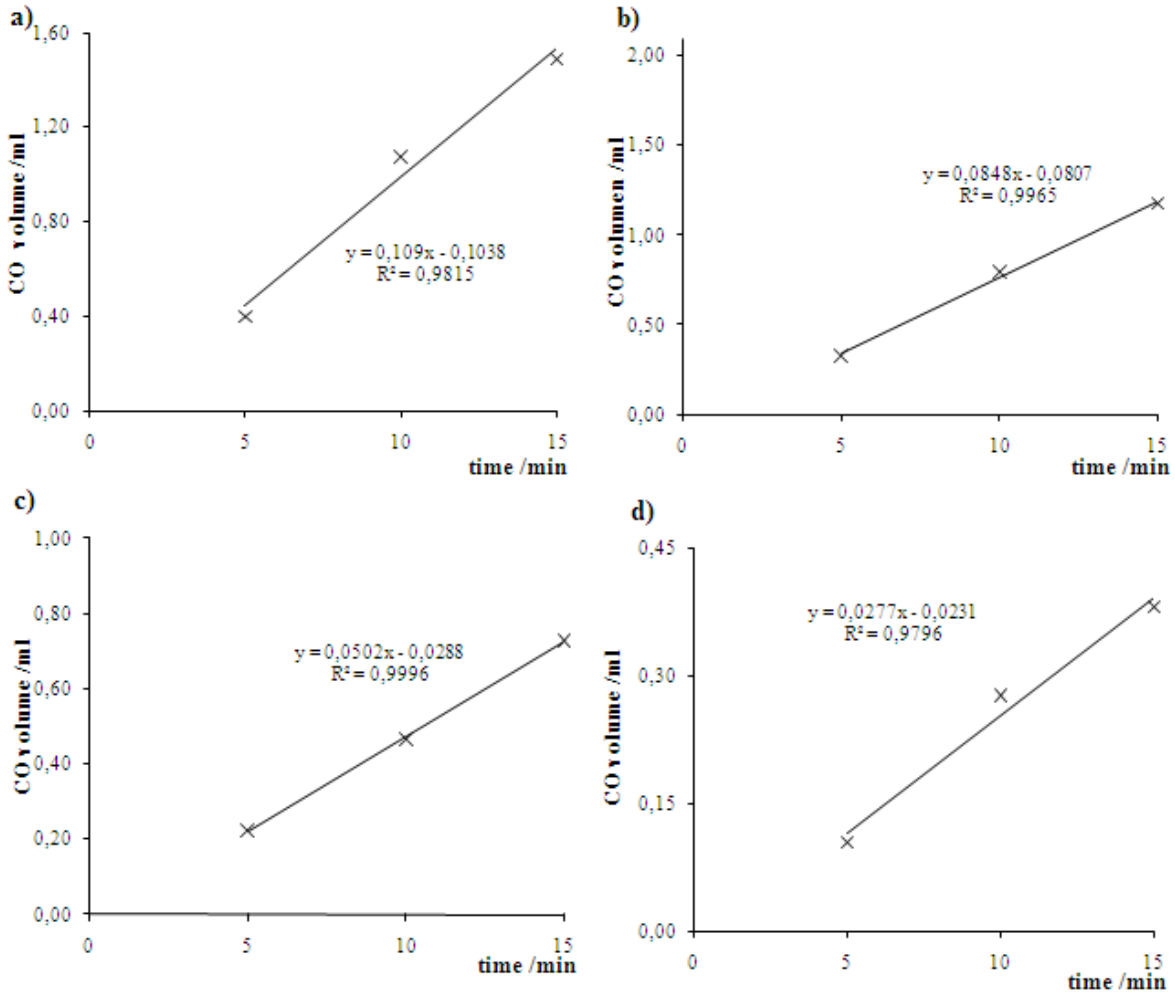

Fig. 1 DMF/TEOA (v/v=3.5/1), Light Intensity 7.4 x 10^{-7} Einstein/s, 450 nm. Catalyst concentration: a) 0.68 mM → $\frac{dV(CO)}{dt} = 0.109$ ml/min b) 0.51 mM → $\frac{dV(CO)}{dt} = 0.0848$ ml/min c) 0.34 mM → $\frac{dV(CO)}{dt} = 0.0502$ ml/min d) 0.17 mM → $\frac{dV(CO)}{dt} = 0.0277$ ml/min.

Irradiation setup

Setup 1:

Asahi Spectra Max 302, Xenon Light Source 300W

Vis Mirror Module (385 nm – 740 nm, Transmittance >90%)

Irradiation Distance 1 mm from light guide

Setup 2:

TUM LED setup:

I=const
-> constant light output

- Power Supply 220 … 240V / 50Hz
- 8 LEDs (K2 Luxeon high power LED's)
- Air cooling system
- Irradiation power: 26 * 10^{-8} einstein*s^{-1}*cm^{-2} (for I = 7 A)

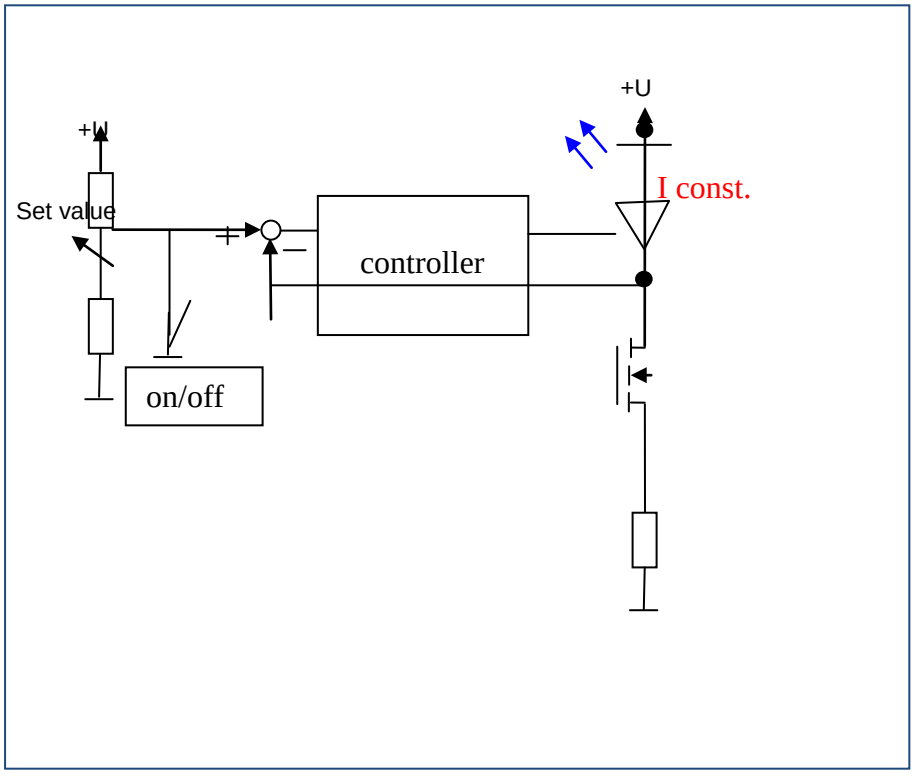

Fig. 2 Schematic plan of the LED control unit.

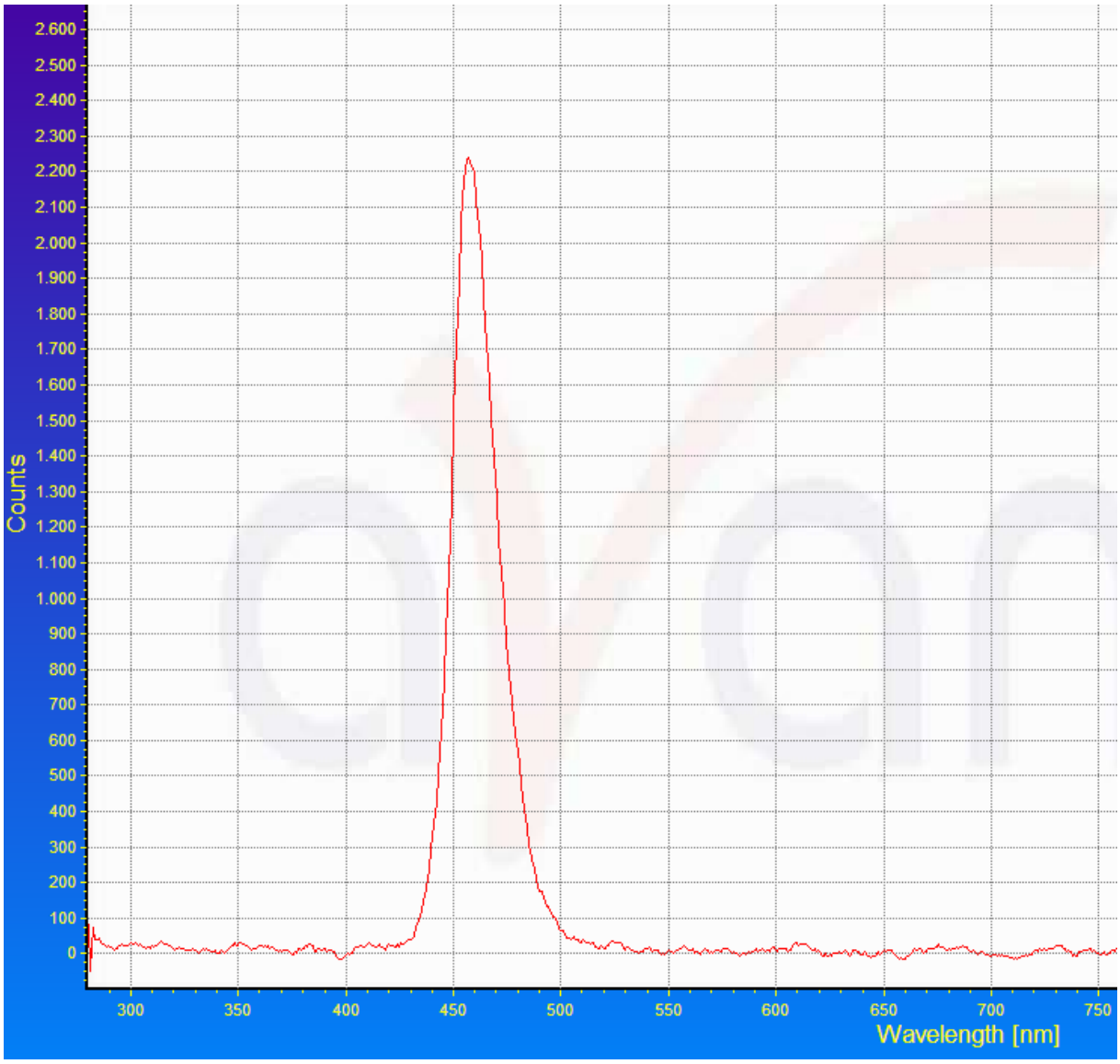

Fig. 3 Irradiation wavelength of the LED-setup.

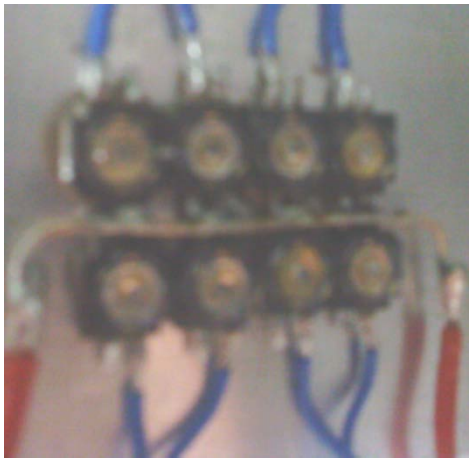

Fig. 4 Picture of the LED arrangement.

GC-TCD System:

Varian 490-Micro GC (serial number CP1002619), 2 Channel System

Column: 492001450 COX 1m, heated

Carrier Gas: He

Column Temp: 80°C

Measurement time: 300 s

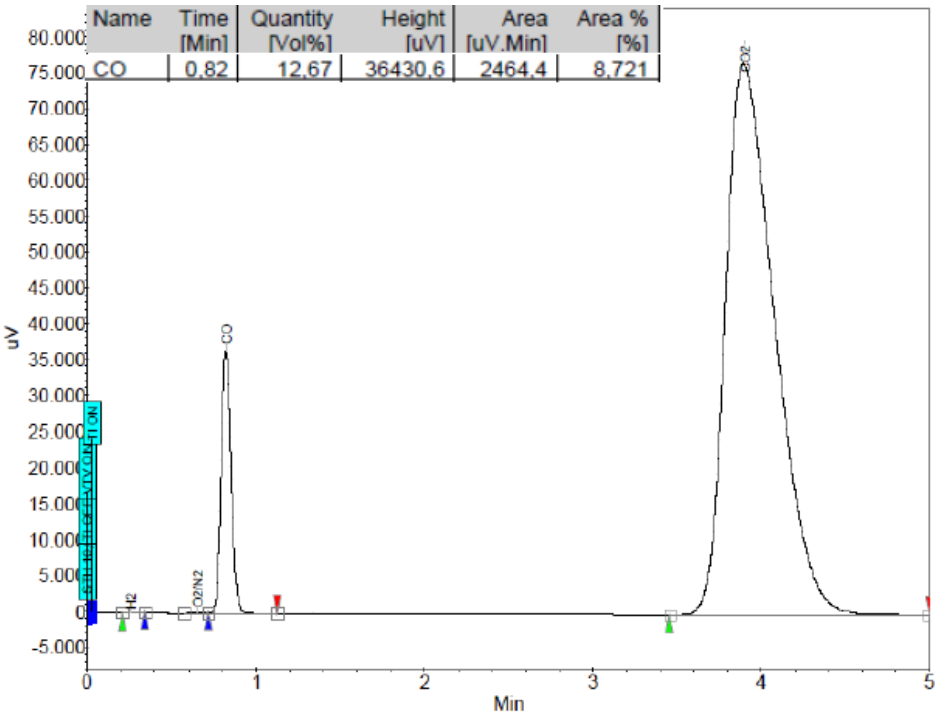

Fig. 5 Sample chromatogram.