Electronic Supplementary Material (ESI) for Soft Matter.

Fabrication of chiroptically switchable films via co-gelation of small chiral gelator with achiral azobenzene-containing polymer

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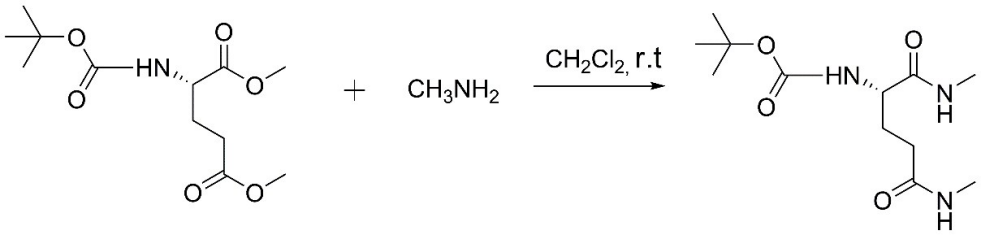

Scheme S1. Synthesis of LBG-CH_3.

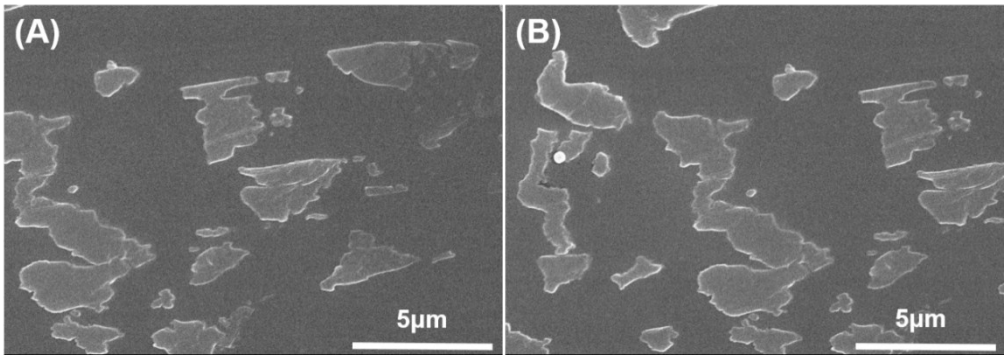

Fig. S1 SEM image of 6-1 polymer (A) and 11-1 polymer (B).

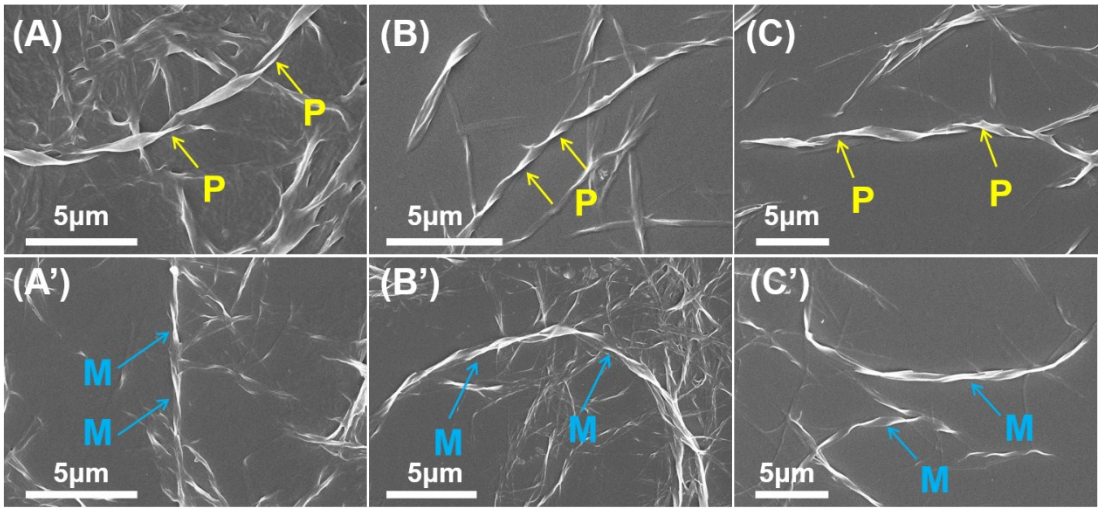

Fig. S2 SEM image of 6-1 polymer/LBG-18 =0.37 (A), 0.185 (B), 0.037 (C), 6-1 polymer/DBG-18=0.37 (A'), 0.185 (B'), 0.037 (C').

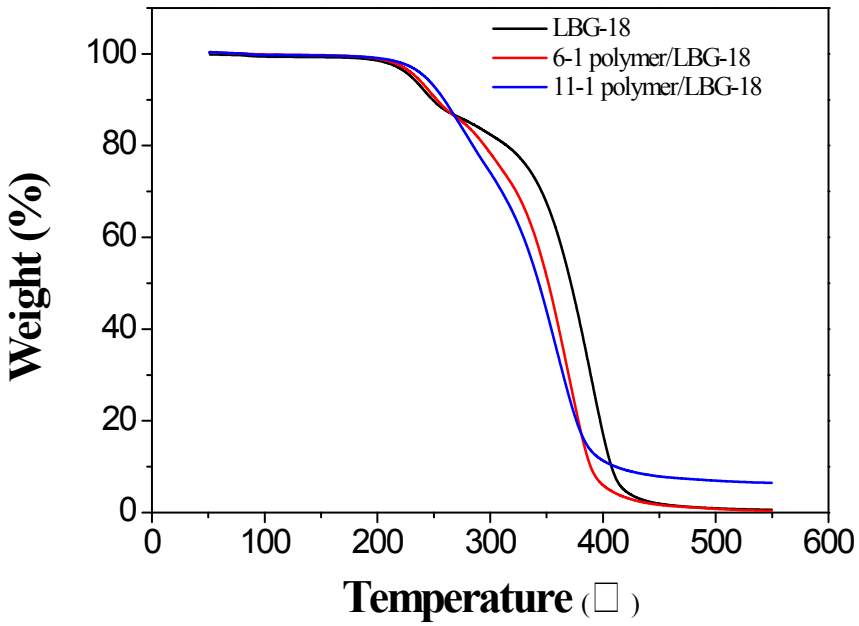

Fig. S3 Thermal Gravimetric Analyze (TGA) for the xerogel of LBG-18, 6-1 polymer/LBG-18=0.074 (molar ratio), 11-1 polymer/LBG-18=0.064 (molar ratio). The heating rate is constant at 10℃/min.

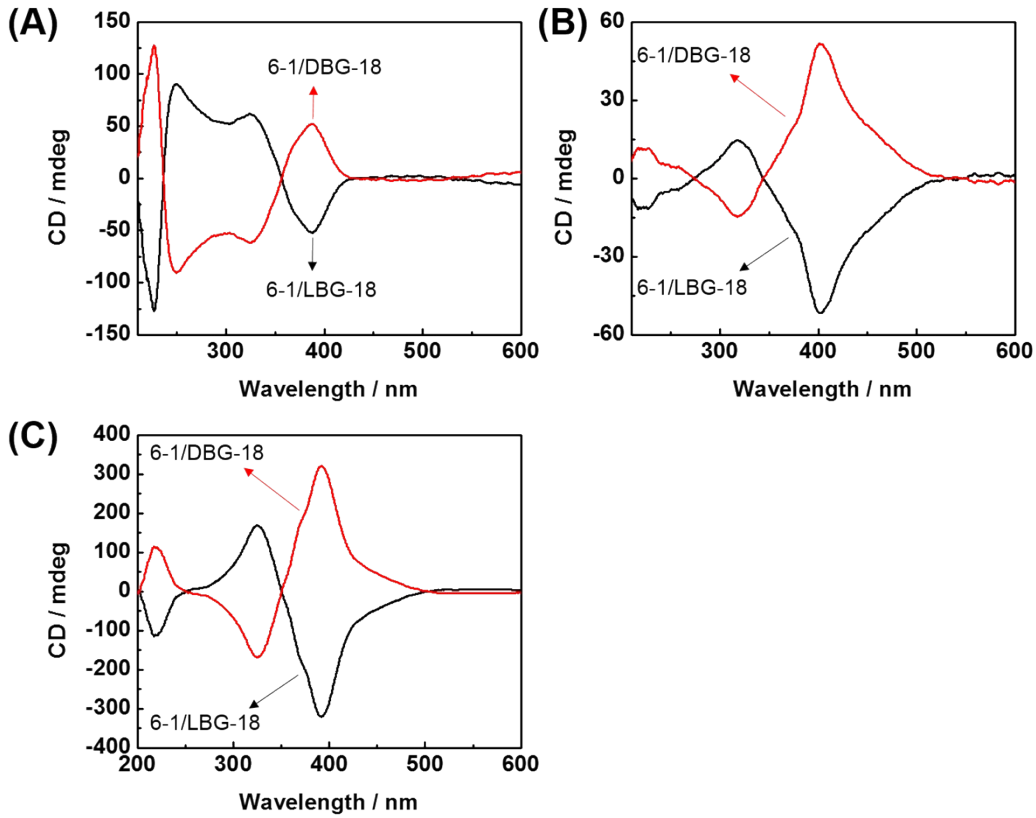

Fig. S4 CD spectra for the xerogels 6-1 polymer/BG-18 at different molar ratio: (A) 0.37, (B) 0.185, (C) 0.037.

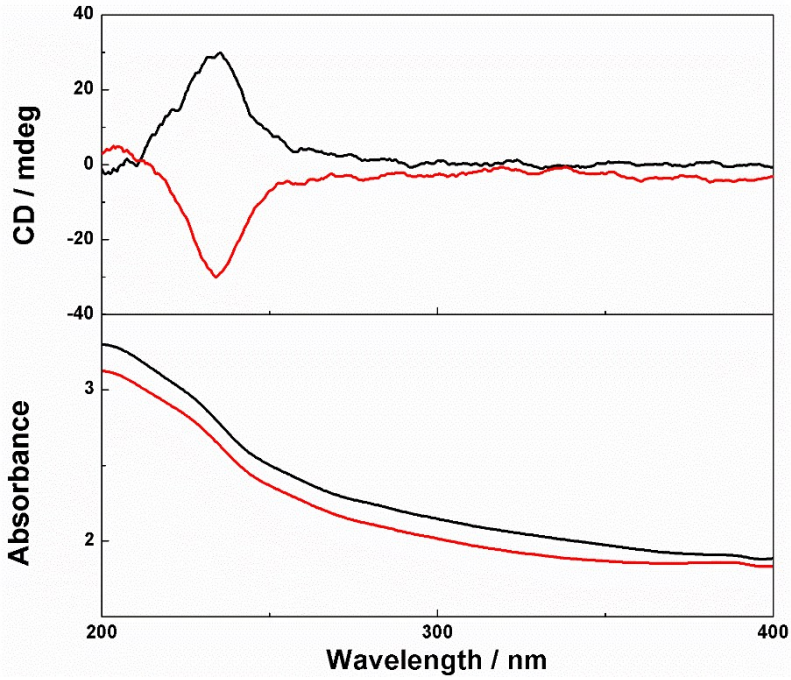

Fig. S5 The CD (up) and UV-vis (down) spectrum of LBG-18 (red line) and DBG-18 (black line) xerogel.

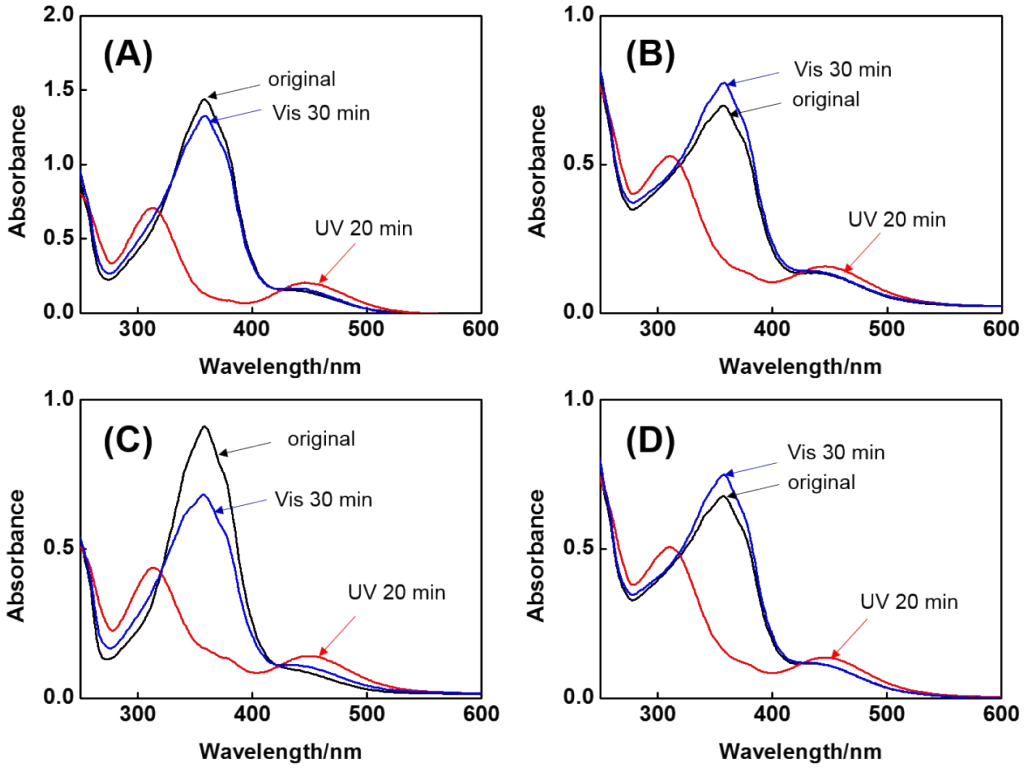

Fig. S6 UV-Vis absorption spectra upon alternative UV and visible light irradiation for (A) 0.13 mg mL^{-1} 6-1 polymer solution in dichloromethane, (B) co-gels of 6-1 polymer/LBG-18=0.074 (molar ratio), (C) 0.05 mg mL^{-1} 11-1 polymer solution in dichloromethane, (D) 11-1 polymer/LBG-18=0.064 (molar ratio). 1 mm cuvettes were used for the measurement of co-gels and 2 mm cuvettes were used for the measurement of solution.

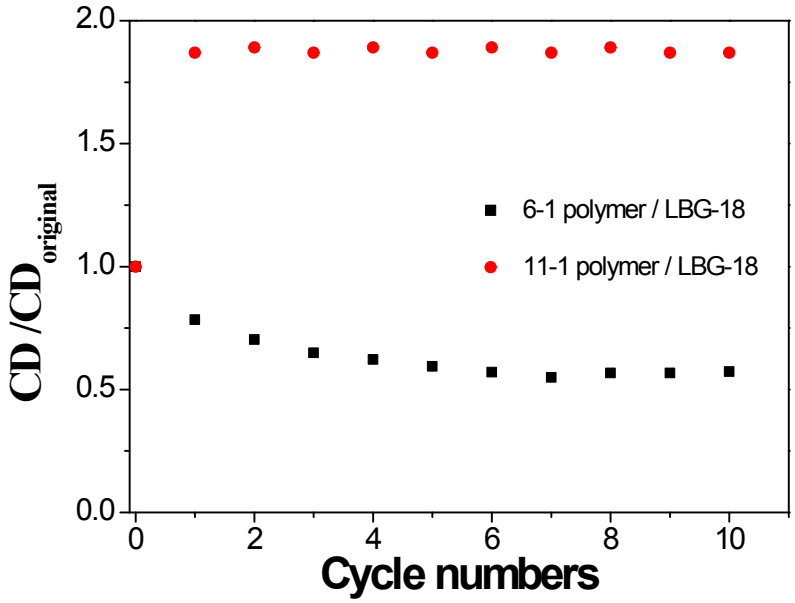

Fig. S7 The relative magnitude of CD signal at 386 nm for each UV-Vis irradiation cycle (CD /CDoriginal). The molar ratio of 6-1 monomer/LBG-18=0.074 (mass ratio 1/25) and 11-1 monomer/LBG-18=0.064 (mass ratio 1/25).

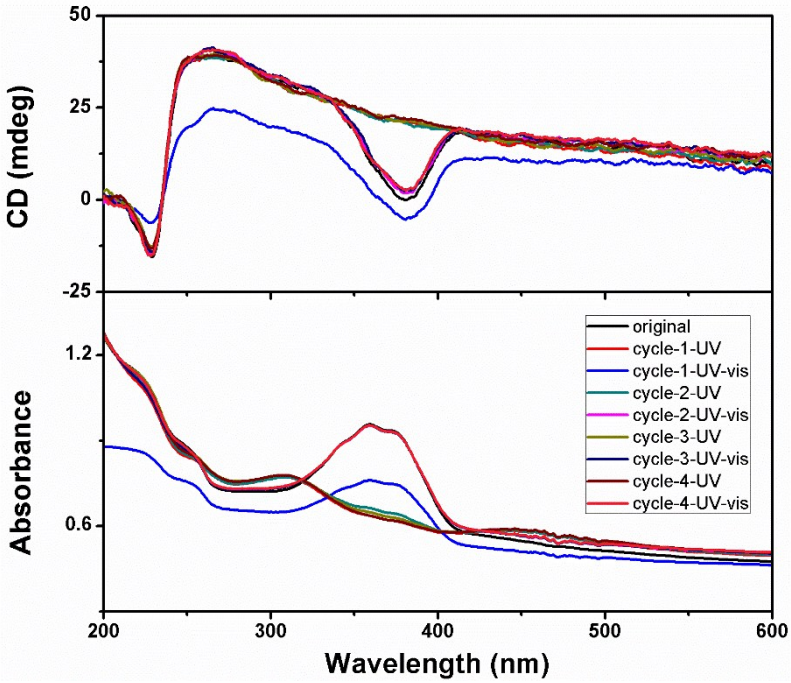

Fig. S8 CD (up) and UV-vis (down) spectra for the xerogel film of 6-1 monomer/LBG-18 under alternate irradiation with 365 nm and visible light at 4 irradiation cycles. The molar ratio of monomer to LBG-18 is 0.074.

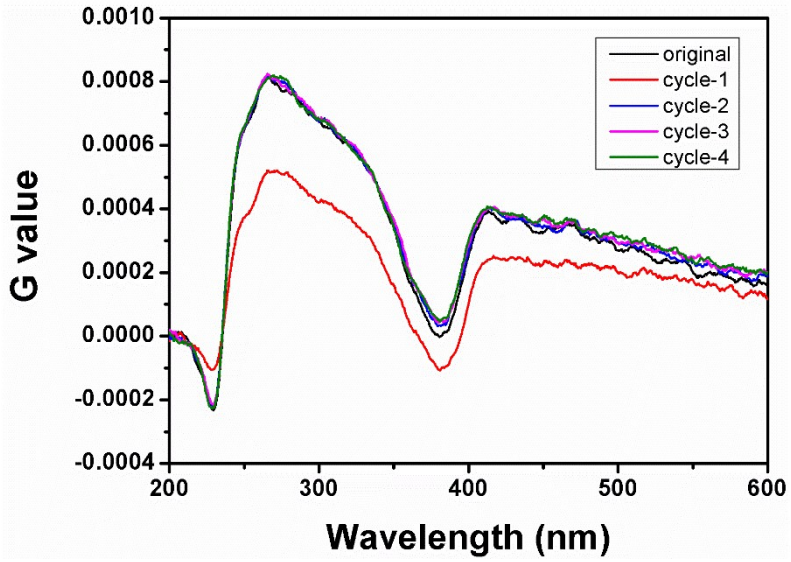

Fig. S9 The change of G value for the xerogel film of 6-1 monomer/LBG-18 under 4 UV-vis irradiation cycles.

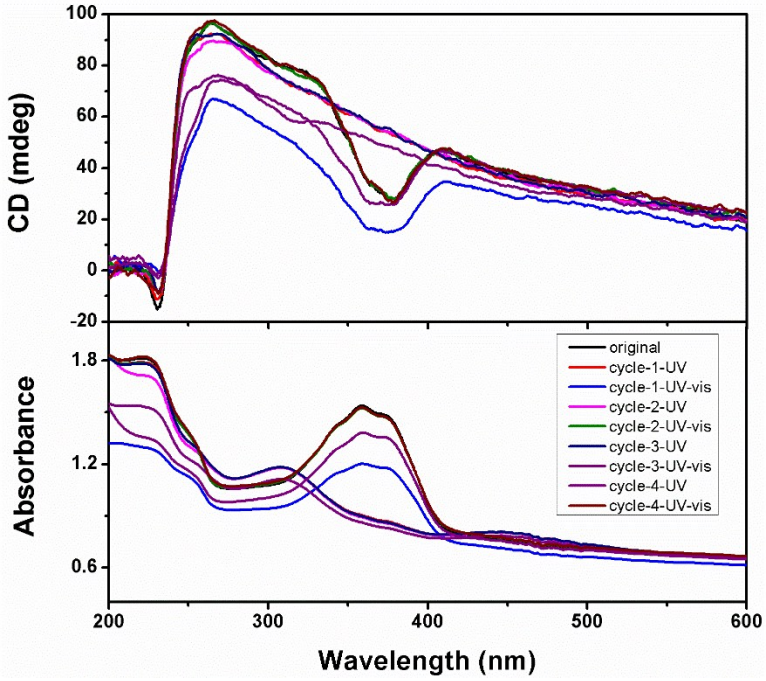

Fig. S10 CD (up) and UV-vis (down) spectra for the xerogel film of 11-1 monomer/LBG-18 under alternate irradiation with 365 nm and visible light at 4 irradiation cycles. The molar ratio of monomer to LBG-18 is 0.064.

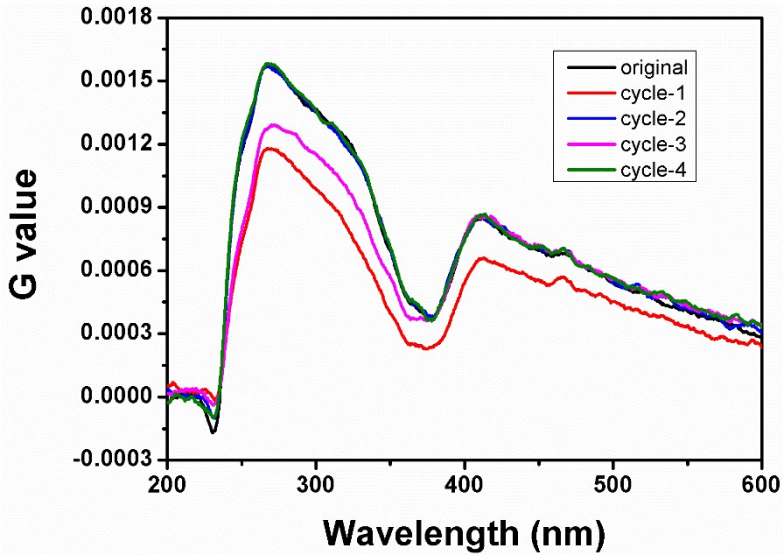

Fig. S11 The change of G value for the xerogel film of 11-1 monomer/LBG-18 under 4 UV-vis irradiation cycles.

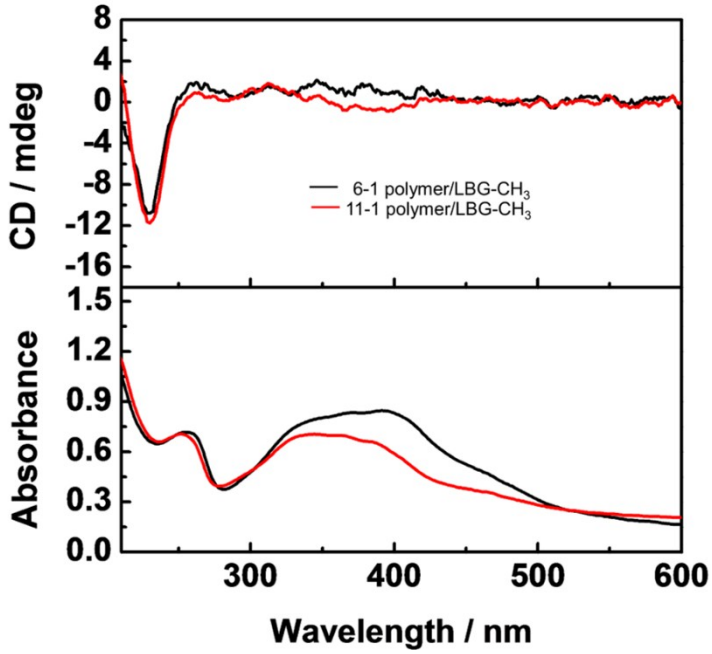

Fig. S12 CD (up) and UV-Vis absorption (down) spectra for the casted film of 6-1 polymer/ LBG-CH_3=0.074 (molar ratio) and 11-1 polymer/ LBG-CH_3=0.064 (molar ratio).