Article

Toluene or Formaldehyde Removal by Photocatalysis and Adsorption Using Hybrid Optical Fiber Textiles Containing Activated Carbon and/or TiO_2

Eya Zghab [1], Frederic Dappozze [1], Jimmy Ferreira Nunès [2], Lina Lamaa [2], Laure Péruchon [2], Cédric Brochier [2] and Chantal Guillard [1,*]

[1] IRCELYON, CNRS-Université Claude Bernard Lyon 1, 2 Av. Albert Einstein, 69626 Villeurbanne, France; eya.zghab@neoformula.fr (E.Z.); frederic.dappozze@ircelyon.univ-lyon1.fr (F.D.)

[2] Brochier Technologies, 90 Rue Frédéric Faÿs, 69100 Villeurbanne, France; jimmy.ferreiranun@gmail.com (J.F.N.); lina.lamaa@brochiertechnologies.com (L.L.); laure.peruchon@brochiertechnologies.com (L.P.); cedric.brochier@brochiertechnologies.com (C.B.)

* Corresponding author. E-mail: chantal.guillard@ircelyon.univ-lyon1.fr (C.G.)

Supplementary Informations

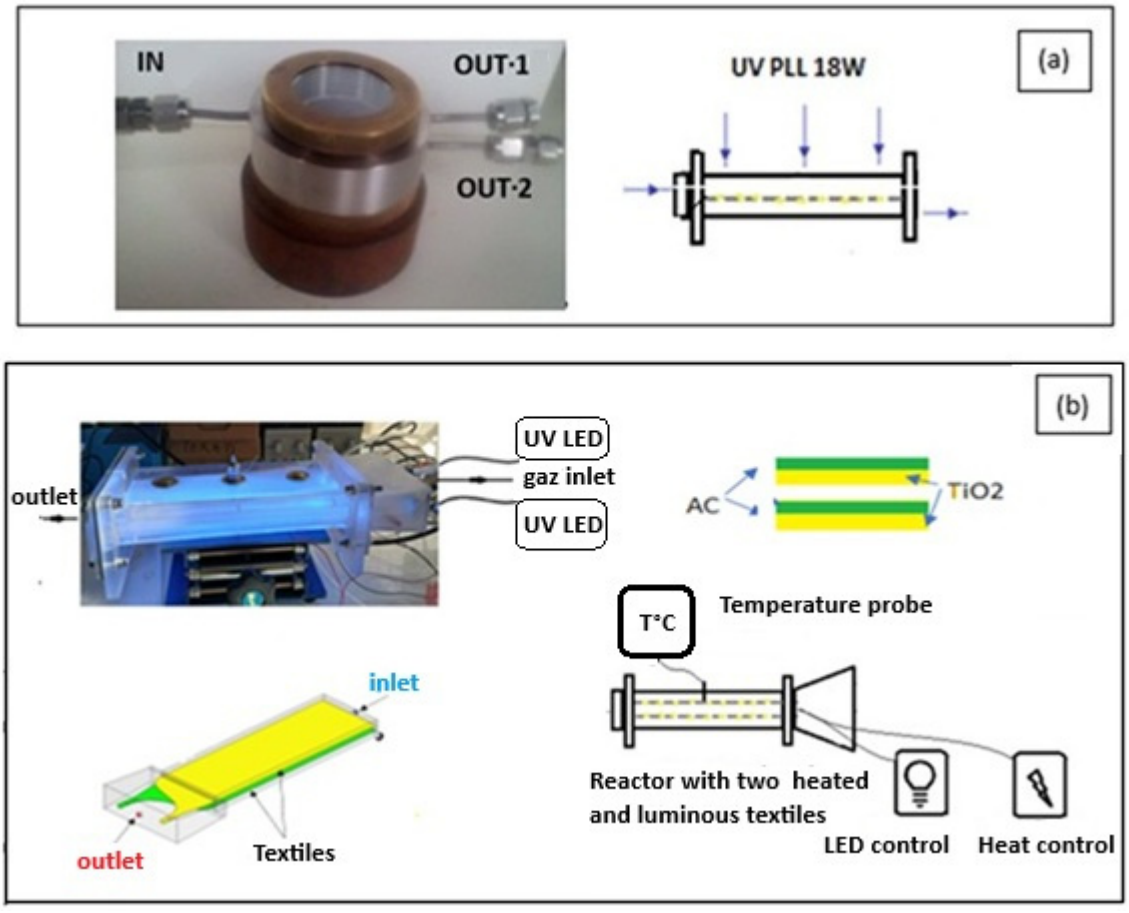

Figure S1. (**a**) Annular reactor used in tangential mode (OUT 1) or in through mode (OUT 2). In our case, main of the experiments were done in through mode except those made with heat. (**b**) photo of the reactor used with luminous heating textiles and arrangement of these two textiles in the reactor.

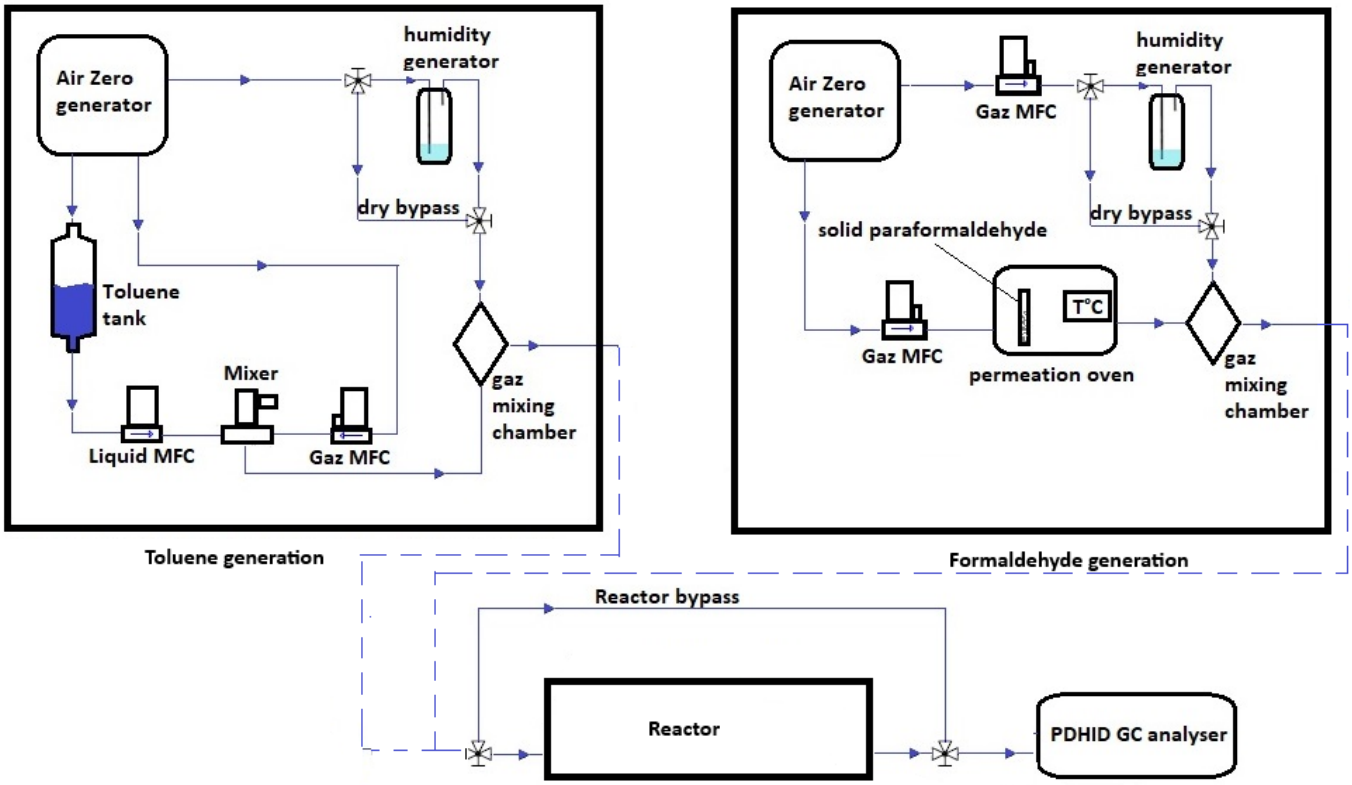

Figure S2. Scheme of the experimental setup.

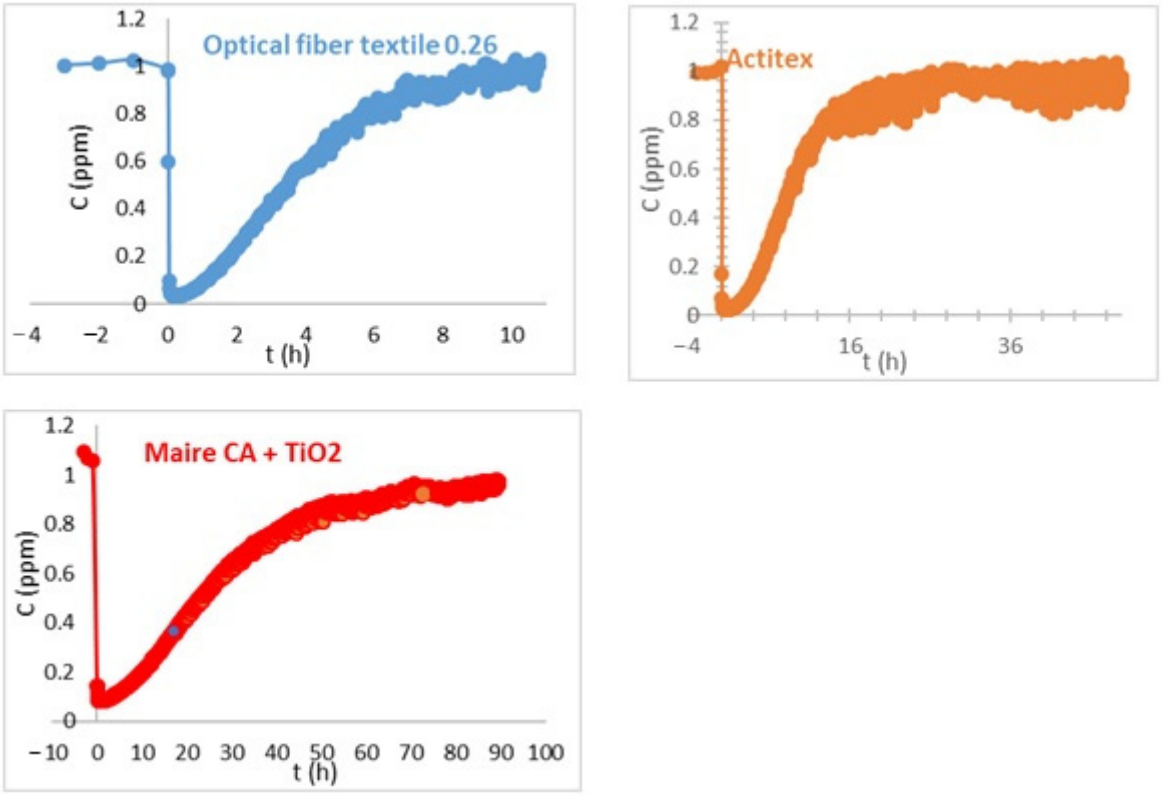

Figure S3. Formaldehyde adsorption using 100 cm × 200 cm of three materials Optical fiber textile + CA2.6, Actitex and Maire CA + TiO_2.

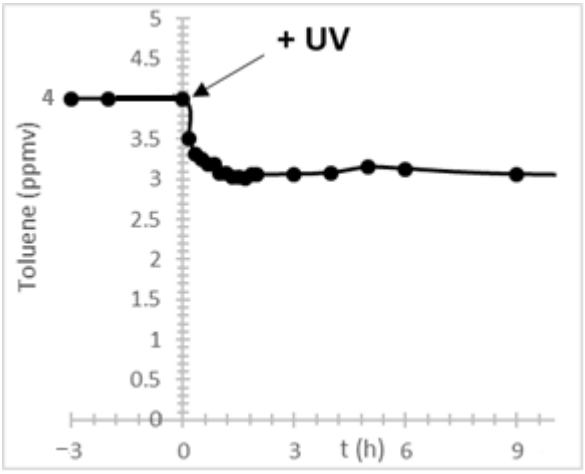

Figure S4. Photocatalytic degradation of toluene in presence de TiO_2 (3 mg/cm^2) coated on optical fiber textile under 4 ppm of toluene at 500 mW/L and 2 mW/cm^2 of UV-A.

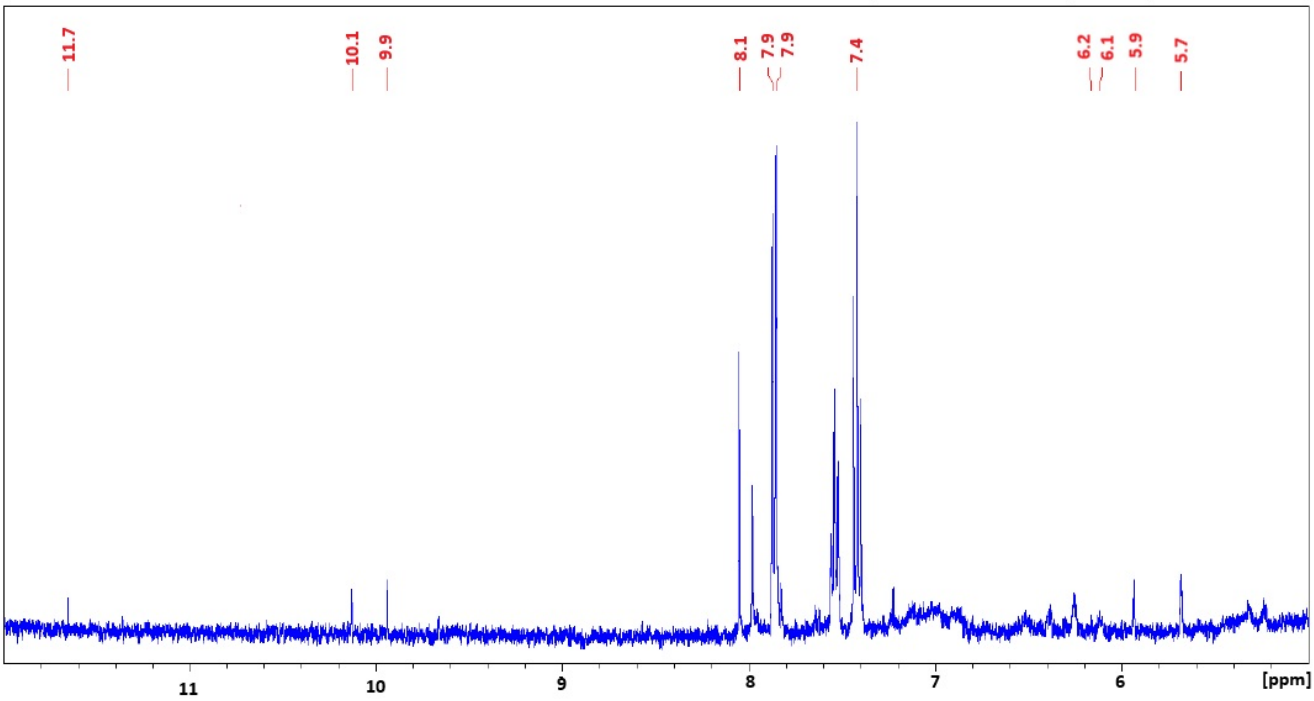

Figure S5. NMR ^{1}H of the extraction of the yellow coloration obtained after photocatalytic degradation of toluene on optical fiber textile coated with TiO_2 P25.