Dear Editor,

We appreciate the comments of the reviewer. The changes made in revised manuscript are red marked.

We look forward hearing your decision.

Kind regards

Prof. dr Maja Radetic

**Comment:** Line 75: „ffabrication of loating” → „fabrication of floating”.

**Answer:** The correction has been made.

**Comment:** Line 95: „The solution of TiCl4” or just „TiCl4”, having in mind that TiCl4 is a liquid?

**Answer:** “TiCl4” is left in revised manuscript.

**Comment:** Lines 97-98: „The pH of the solution ranged between 0 and 1, depending on the concentration of TiCl4”. It is not clear why the concentration of TiCl4 was varied? Have you synthesized one or more samples?

**Answer:** The change has been made in revised manuscript: “The pH of the solution was 0.”

**Comment:** Figure 1: Label what are TI and PI!

**Answer:** TI and PI are defined in the caption of Fig 1 in revised manuscript. TI is the temperature indicator and PI is the pressure indicator.

**Comment:** Experimental procedure (photocatalytic degradation): Have you equilibrated the system (dye solution and PCL) in dark in order to reach adsorption/desorption equilibrium? Have you mixed the system?

**Answer:** No, we didn’t equilibrate the system. The adsorption of these dyes was negligible as you can see on the photos of the PCLb and PCLf without TiO2 NPs (Fig. 6). Dye solutions were shaken during the illumination and this is included in revised manuscript: “The beaker with a sample was put in the water bath and it was shaken under the ULTRA-VITALUX lamp (300 W, Osram).”

**Comment:** Results of FESEM: Having in mind that the average size of TiO2 particles is 6 nm, it cannot be say that Fig.3b (bar 1 μm) clearly reveals the presence of single TiO2 particles. In order to compare micrographs of PCLf and PCLf+TiO2, FE SEM micrographs at the same magnifications should be given. Therefore, Fig. 3a should be replaced with the micrograph at the same magnification as in Fig. 3b. In addition, similar micrographs as in Fig. 3a have been already published (Ref. 21).

**Answer:** This sentence is changed to: “Fig. 3b reveals the presence of mostly agglomerated TiO2 NPs on the PCLf+TiO2 surface.” It is impossible to give the images of the same magnification as the sizes of the pores on/in the PCL foam are considerably larger compared to nanoparticles immobilized on the PCL foam. Similar, but not the same micrograph has been published. The control substrate (PCL foam) was the same and we cannot expect to see something else. We cited our previous work several times and even compared these with current results.

**Comment:** Fig. 4: Label the peak at about 2.1 keV.

**Answer:** The peak at 2.1 keV corresponds to Au which was used in the preparation of the fabrics for FESEM analysis as explained in the experimental part. Fig. 4 is revised as recommended.

**Comment:** Lines 190-192: Indicate that it was the case with PCLf+TiO2 (Degussa)!

**Answer:** We thought that it was clear from the previous sentence that discussion is related to Degussa P25 nanoparticles. To avoid any misunderstanding, it is indicated as requested in revised manuscript: “Just to illustrate, in the case of the PCLf+TiO2(Degussa P25), 90% of dye AO7 and 100% of dye BY28 were removed already after six and three hours of illumination, respectively.”

**Comment:** Lines 192-198: Explanation of better photocatalytic activity of the sample with Degussa P25 in comparison to sample in this paper is not complete. Besides the phase composition (anatase or anatase + rutile), the photocatalytic efficiency is influenced by crystallite size: the larger the crystallite, the photocatalytic efficiency is higher. The size of crystallite of Degussa P25 TiO2 is about 30 nm, while the size of TiO2 crystals in this paper is about 6 nm.

**Answer:** We cannot agree with a statement that “the larger the crystallite, the photocatalytic efficiency is higher.” Given sizes do not correspond to crystallites but to nanoparticles (the size of crystallite and nanoparticle is not the same except in the case of monocrystallite what we don’t have in the case of Degussa P25). Generally, the smaller the nanoparticles, the larger the active surface and thus, their reactivity. The active surface area of our nanoparticles is larger than Degussa’s as they are smaller. Therefore, higher efficiency of Degussa P25 can be explained only by the synergetic effect of anatase and rutile phases as discussed in the manuscript.

**Comment:** Line 195: „The addition of rutile...“ → „The presence of rutile...“

**Answer:** “The addition” is replaced with “The presence” in the revised manuscript.

**Comment:** Lines 229-238: It is stated that the efficiency of the PCLb+TiO2 increased with repetition of illumination cycles, but it was not indicate that the efficiency of the PCLf +TiO2 decreased with repetition of illumination cycles. Explain! Is there possibility of the TiO2 particles detachment?

**Answer:** We apologize, subscript “b” was written instead of “f” in the original manuscript. We didn’t investigate the repetition of the PCLb+TiO2 sample. In fact, dye solutions acted differently as the reviewer mentioned. It is added to revised manuscript: ”In contrast, discoloration rate in the case of AO7 solution slightly decreased in the 2nd and the 3rd cycle, but complete dye removal was obtained after 24 h.” We don’t have explanation for such behavior. We don’t think that this is due to detachment of particles as complete removal is obtained within 24 h as in the case of other dye.

**Comment:** Line 258: Why „also“?

**Answer:** “Also” exsists in this sentence because of the first sentence in this paragraph where it was stated that the pseudo first order kinetic model well fitted the photodegradation of different dyes in the presence of TiO2 NPs under UV illumination (the literature was cited). With this “also” we confirmed that it is the same in the case of dyes investigated in our study: the pseudo first order kinetic model also fits well the photodegradation process of dyes AO7 and BY28.

**Comment:** Lines 257-259: Give comment that the rate constant decreased with the repetition of illumination cycles in the case of PCLf +TiO2, while increased in the case of PCLb+TiO2.

**Answer:** We didn’t investigate the PCLb+TiO2 from this point of view (Table I). We suppose that the reviewer thought of different behaviour of investigated dyes. Therefore, the following sentence has been added to revised manuscript: “The rate constant decreased with repetition of illumination cycles in the case of AO7 whereas it increased for BY28.”

**Comment:** Lines 287-289: Reformulate the sentence (also the sentence in Abstract – lines 23-24), because the degree of the dye degradation depends not just on the photocatalyst properties, but also on the dye and photocatalyst concentration. Therefore, if the dye concentration is higher and photocatalyst concentration is lower, longer time is necessary for complete discoloration.

**Answer:** We agree with a reviewer, but we didn’t investigate the influence of dye concentration and photocatalyst concentration on dye removal from solutions. The procedure is clearly explained in the experimental part. However, in order to avoid any misunderstanding, we added the exact concentration of initial dye solution (10 mg/L) in both the abstract and the conclusion.