



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2014_BJAST_11049
Title of the Manuscript:	Synthesis and Glass immobilization of carbon and nitrogen doped TiO ₂ -SiO ₂ and its effect on E. coli ATCC 25922 bacteria
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



SDI Review Form 1.6

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Title of manuscript mentioned "carbon and nitrogen doped TiO₂-SiO₂ and its effect on E. Coli...", however in the introduction section there is not justification for the carbon or nitrogen doping. The EDX analysis show only a low concentration of carbon and nitrogen in the samples and the FTIR do not show strong evidence of the nature of the carbon or nitrogen chemical species trapped inside the TiO₂-SiO₂ substrates. Furthermore, there is not sufficient evidence and analysis for postulate the possible chemical or physical situation of carbon or nitrogen in the substrate structure and its participation in the inactivation of the E. Coli grow. Contrary to that suggested in the title, the presence of "carbon or nitrogen" in the substrates there are no great effect over the bacterial growth profiles as occurs in the case of TiO₂ powder. Author's alluded the phagocytosis as principal cause of the bacterial death when TiO₂ powder was used and minimizes the photo-catalyzed radical action. Furthermore, there are no mentions of the possible interfering effect of carbon or nitrogen species over the radical species photo generated in the TiO₂-SiO₂ substrates.	Thank you for your comments. Authors have added the necessary information as suggested. We acknowledge the limitations of FTIR data. SXPS data has been added to support successful C-/N-doping of titanium dioxide. The doping process was done to allow utilization of visible light. This is supported DRS data which showed that the photo-catalyst is visible light active. The aim of this study was to check effectiveness of immobilized photo-catalyst on the inactivation of E.coli. Unfortunately this is not the case because results showed glass immobilization to hinder effective E. Coli inactivation. Authors discussed their findings in relation to the experimental outcomes as well as in comparison with findings from literature. The issues of the cause of bacterial death due to



SDI Review Form 1.6

		phagocytosis versus photocatalytic radical action as well as the effect of C and N species over radical species photo-generated will be studied in our next work
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		