



SDI Review Form 1.6

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	Ms_IRJPAC_19768
Title of the Manuscript:	The Effects of Solvent and pH on the Electronic Spectral Properties of Indolino Spirobenzoxazine
Type of the Article	Original Research 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	Abstract; 1. spectral properties have been shown to correlate as ---spectral properties were correlated... 2. two parameters linear-----mention the name of equation 3. contribution of----mention the contribution in HBA etc Introduction 1. page 1 line 16-17 sentence is incomplete 2. page 1 line 21 Add a reference here. 3. page 1 line 27 with different polarity 4. page 1 line 37 Add why it has received attention 5. page 2 line 30 Remove this text from line 30 to 67. it is not required as it is part of some literature. Only use it for your discussion. Add after Materials and methods Section., a new section as Calculation; where required equations is to be added. Add the name of software with version that is used for multiple regression analysis. 6. page 2 line 30 After removing as mentioned : Add the importance of the work, for your selection of problem :for practical use or theoretical use. 7. page 2 line 70 only one aprotic solvent is used. correct the sentence.	Abstract 1. There is no statement in the abstract "spectral properties have been shown to correlate as..." The statement reads "spectral properties have been shown to correlate successfully with solvatochromic parameters..." 2. The name is already given: linear solvation energy relationship (LSER). 3. Noted. Introduction 1. Noted. 2. Noted 3. Noted 4. Noted 5. This is the literature foundation of the work. The discussion gives interpretation to the research findings and avoids excessive literature citations. After materials and Methods Section, I do not understand the required equation and calculation you are referring to. The software version has been added accordingly and there is no need creating a sub-section. 6. This represents the literature foundation.



SDI Review Form 1.6

	8. page 2 line 71, what is HBD and HBA mention it It is big sentence break it in two parts to make a sense. Material And Methods 1. page 2 line 71: Mention the purity of solvents or if purified or checked . Add a table for its purity. because purity important for this type of work. 2. page 2 line 76: All the solvents have high v.p so how loss was minimized and concentration checked from time to time during practical work. Mention it. 3. page 2 line 79: It is difficult to adjust exact pH after 9.00 of and more what was accuracy of pH. I also doubt if pH can be exactly maintained using strong acid base. It is better to use buffers in such cases. So i doubt about authenticity of readings. Results and Discussion 1. page 3 line 94: Add in the table these maxima in found in water. They are reported and which transitions are assigned to each peak and make a comparison. Add reference for assigning transitions. Add polarity values of solvents from literature in table. Two are alcohols and show h bonding and other is acetone. compare with water values. 2. page 3 Remove S from effects in line 102 3. page 3 line 105: shift is always w.r. t to some value. Use water it will help in better understanding. Add that. 4. page 3 line 109: Mention the peak 5. page 4 line 109: Mention why two peks are	7. The plural form of solvent used here represented two categories: polar protic and polar aprotic. The sentence would have been wrong if I used ...polar protic solvents and polar aprotic solvents. As it stands, there is nothing wrong. 8. HBD and HBA were already defined where they first appeared in the text. Check page 2 line 58 and 59. Materials and Method 1. The purity of the solvents had been mentioned. Spectroscopic grade (Merck) 2. Handling methods are precautionary. It does not form part of the text. I have not seen that in all the research materials of reference 3. It may be difficult but not impossible. The work was all about recording the absorbance. Also, changes in pH were not expected in the course of the work, Results and Discussion 1. "Add in the table these maxima in found in water". Your comment is not clear please. Found in water how? Reference for assigning transitions-noted. Polarity values were not used and I think it will not be necessary quoting values from literature that are not used in the work.
--	---	---



SDI Review Form 1.6

	influenced not third peak. Discuss considering nature of solvent. 6. page 4 line 120: Rewrite the portion from 121 to 130. It is confusing. 7. page 5 line 140: Solvent Polarity Parameters: Which Parameters Mention. 8. page 7line 183: table 2 is for which X1 value Since the model gave the same R₂ 182 value for all the solvent parameters tested, the best model was chosen considering the least residual between the experimental absorption data and that predicted by the model. Statistically there is no proof if r₂ is same then it is the best model. clarify it. 9. page 7line 187: Kamlet Taft equation is used but it is not mentioned anywhere. 10. page 7line 187: It is correlation w. r. t. to all the three solvents, how ethanol can be explained by it. 11. page 7line 197: Is it uniparametric or multiparametric. clarify CONCLUSION Rewrite the conclusion mentioning effect of three solvents individually fro table 1. What property like polarity amd h donor etc is responsible in change of shift. Then why pH effects the particular peak in particular ph also combined effect of three solvents. Transitions can be considered.	2. Noted. 3. Shift in this case is the difference in $\lambda_{\max}$ observed between any two reference points (in this case, the solvents used). 4. The name peak 1 is mentioned already. 5. It is well known that peaks that are solvent insensitive are due to local transitions. This statement has been added and cited accordingly (Ref. 12) 6. Noted. 7. Noted. 8. Table 2? Table 2 is observed E_T values of the compound. R² being the same shows that the models can predict the expected property with similar degree. But these gave different residuals. So the best model is the one with the least residual (perfect or near perfect predictability). A residual of zero (perfect) and a residual of 4.4E-16 (near perfect) are different but with same R² 9. Kamlet Taft equation was mentioned. Check line 53-54 under introduction. 10. That is why it is correlation not a single treatment. All the solvents are involved since their parameters are used (using the solvents parameters to explain absorption properties). 11. The models are shown above the discussion. It's a multi-parameter
--	---	---



SDI Review Form 1.6

		regression. Those are contributions as judged from the sensitivities (coefficient of each variable). 12. Effects of solvents are judged when considering what a solvent is doing with respect to other solvents, not individually. We are not looking at the electronic property in individual solvent but effect of solvents. For instance, considering methanol and ethanol, what noticeable difference is there in the spectra of the compound? That's the effect on electronic spectral properties The trend in properties based on the solvent polarity has been mentioned and the contributions of hydrogen bonding (HBA and HBD) and polarity (dipolarity/polarizability) have been evaluated.
<u>Minor</u> REVISION comments	-----	
<u>Optional/General</u> comments	Language check up is needed. Discussion is incomplete, need to clarify and justify title of paper.	