**# Reviewer A**

This research is about development of a phase diagram and LLE data of an aqueous two-phase systems. Basically, research in this area is interesting and the results have lots of benefits for industrial application. So in my opinion the manuscript is fitted to this journal

aim also the research design is professional and novel to be publish by and International Journal. I have some minor comments that may improve the final quality of the manuscript as follow:

- You can improve the abstract part by addition of main conclusion at the end of this part.

**Respond: Many thanks for your great comments, it was implemented to the abstract.**

- Line 67, need citation for Pirdashti.

**Respond: Thanks, it was added appropriate citation.**

- Line 72, better to write “average of 300, 400, and 600” instead of “average of 300,400 and 600”

**Respond: Thanks, it was revised.**

- Line 87, it is better to remove (TLs), may confusing with TLL and STL

**Respond: Thanks, it was deleted.**

- Line 94, instead of (Made in Germany), mention (City, Country)

**Respond: Thanks, it was corrected.**

- Figure 1, Caption mention solid line but there is no solid line in figure

**Respond: Thanks for precious comment, it was change as dashed line.**

- Line 174, check the punctuation for Figure5 or Figure 5. Also check through whole manuscript.

**Respond: Thanks for precious comment, it was corrected through whole manuscript.**

**# Reviewer B**

Manuscript is about a phase diagram and LLE data for aqueous two-phase systems having zinc or magnesium or aluminium sulfate and PEG (300,400 and 600) at 298.15K. in overall, design of research and methodology are appropriate, and presentation of the results are in a clear and reader friendly mode. Subject of the manuscript is fitted to journal aims and scope and the manuscript have enough novelty to be publish by HEMIJSKA INDUSTRIJA. But there are some minor comments that may improve the quality of the manuscript as follow:

**Respond: Thanks for the great review and comments.**

1. Title:
   1. I recommend instead of “Influence of…” use “The effects of…”
   2. Also instead of “Poly (Ethylene Glycol)” use “Poly Ethylene Glycol”

**Respond: Thanks for this comment. Title was modified based on recommendation.**

1. Abstract:
   1. Abstract should contain a main conclusion, please add a clear conclusion to the end of abstract.

**Respond: Abstract part revised, and main conclusion added to abstract.**

1. Keywords:
   1. One of the main keywords that may other researchers looking for is “Phase diagram” I recommend to changing this keyword by “Sulfate”.

**Respond: Thanks for the comment, corrected.**

1. Introduction:
   1. Introduction part is smooth and in clear way, but some of the punctuations need to double check, for example check Lines: 51, 54, 55,…

**Respond: Thanks, all punctuations checked and corrected.**

* 1. Line 61, it is better to use “To the best of our knowledge”

**Respond: Thanks for comment, it was corrected.**

1. Material and Methods:
   1. Line 74, Sigma (City, Country).
   2. Line 82, instead of using “our research” please mention the name and year of publication.
   3. Line 89, Explained earlier by whom?
   4. Line 108 Check the sentence about referring first reference and then mention about equation.
   5. Line 128, better to mention supplementary Table 1 instead of Table S1.

**Respond: Thanks for all these comments, all corrected one by one.**

1. Results and Discussion:
   1. This part is written in a very clear way.
   2. Check the table sequences for Table 9 should be Table 7.

**Respond: Thanks, positive comments, all corrected.**

1. Conclusion:
   1. I recommend adding some research suggestions for other researchers (if any).

**Respond: Thanks, we have added a few words about prospects.**

1. References:
   1. References are update and relevant to the current research.

**Respond: Thanks for all your comments**

**# Reviewer C**

This is a good study on preparation of ATPSs with PEGs of different Mws and some salts. One important point is application of these systems in complexed biopolymers for encapsulation purposes which should be highlighted within Introduction. Pls see: Production of pectin-whey protein nano-complexes as carriers of orange peel oil. Carbohydrate Polymers, 2017. 177(Supplement C): p. 369-377. Chitosan-gum Arabic complex nanocarriers for encapsulation of saffron bioactive components. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2019. 578: p. 123644.

**Respond: Thanks for all your great feedback and comments. We have implemented the application of these systems in Nano emulsions and interactions with biopolymeric systems.**

Also, pls add a Statistical subsection at the end of M&M detailing DOE, variables and their levels.

**Respond: Dear reviewer, many thanks for your great idea, mostly this research is a combination of modelling and practical analysis, so we mostly focused on curve fitting and theoretical modelling analysis that already described in 2.4. Analytical Methods.**

**# Reviewer E**

* Line 40 – it should be written “ ..liquid-liquid extraction technique THAT was first introduced…”;

**Respond: Thanks for your comment, it was corrected,**

* Line 50 – closing bracket is missing;

**Respond: Thanks, Corrected.**

* All references should be uniform, for example, name of the paper in ref [15] is written as "Fluid Phase Equilib." while the name of the same paper in ref [30] is written as "Fluid. Ph. equilib.". Also, in some ref. authors use capital letters while in some ref. authors use non-capital letters. Authors should check all references and make them uniform.

**Respond: Thanks, All references double checked and corrected.**