**October 3, 2019**

**Prof. Bojana Obradović**

Editor-in-Chief

**HEMIJSKA INDUSTRIJA**

#### Dear Professor ****Bojana Obradović****

**Title of research paper:** “Influence of the Polymer Molecular Weight and Type of Cation on Phase Diagrams of Poly (Ethylene Glycol) + Sulfate Salts Aqueous Two-Phase Systems”

**Authors:** Golamhossein Parmoon, Abdorreza Mohammadi Nafchi and Mohsen Pirdashti

**Details of corresponding author (Abdorreza Mohammadi Nafchi):** Abdorreza Mohammadi Nafchi, School of Industrial Technology, Universiti Sains Malaysia, 11800, Penang, Malaysia; E-mail: amohammadi@usm.my; Telefax: +604 653 5207

I would be grateful if you would consider the above paper to be published in *HEMIJSKA INDUSTRIJA*. The results of this research can provide a theoretical and practical basis for further design, optimization and scale up of such processes and also development of models that predict phase behavior.

**Novelty aspect**: This research provides the phase diagrams, compositions, and physical properties of coexisting phases for poly (ethylene glycol) (PEG) (300, 400 and 600) + zinc sulfate/magnesium sulfate/aluminum sulfate aqueous two-phase systems (ATPS's) at 25 °C. It also highlights the binodal curve, tie line length, slope of tie line length and physical properties (density and refractive index) of ternary of mention system correlations. We evaluated the effect of polymer molecular weight on the binodal curves and summarised the key findings of our analyses. Finally, the study determined the effective excluded volume (EEV) of the salt into the PEG aqueous solution. According to our knowledge, only rarely has the effect of PEG molecular weight on LLE data been considered.

On behalf of the co-authors, I would like to declare that:

* The work described is this paper has not been published previously, that it is not under consideration for publication elsewhere,
* All the authors have mutually consented to submit the manuscript to *HEMIJSKA INDUSTRIJA.*
* The manuscript is original work of all authors
* If accepted, the paper will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder.

Suggested referees are also given in the following page.

Thank you and kind regards.

Abdorreza Mohammadi Nafchi

**School of Industrial Technology**

**Universiti Sains Malaysia**

**Penang, Malaysia**

**Suggested Reviewers:**

**Amir Heydari​**Department of Chemical Engineering,

University of Mohaghegh Ardabili,

Postal Code 179, Ardabil, Iran

Email: heydari@uma.ac.ir or heydari.amir@gmail.com

**Shimae Jafarzadeh**

School of Industrial Technology, Universiti Sains Malaysia, Penang, Malaysia

Email: jafarzadeh@usm.my

Tel: +60 14-234 0243

**S. M. Jafari**

Department of Food Materials and Process Design Engineering, University of Agricultural Sciences and Natural Resources, Gorgan, Iran; Tel./fax: +98 171 4426 432.

E-mail: smjafari@gau.ac.ir

**Seyed Amir Oleyaei**

Department of Chemical Engineering,

Ferdowsi University of Mashhad (FUM),

Mashhad, Iran**.**

E-mail: amiro61@gmail.com