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## COMMENTS ON “ANALYSIS OF HEAT TRANSFER AND IRREVERSIBILITY OF ORC EVAPORATOR FOR SELECTING WORKING FLUID AND OPERATING CONDITIONS”

by

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*Commentaries are presented on Ye et al. [1]’s paper, where the authors investigated the performance of heat transfer in evaporator under the case that the parameters of the heat source and temperature of pinch point were identified. They utilized the graphical method of temperature-heat ( $T-Q$ ) diagram analysis. Also, they utilized the entransy principle in their analysis. Commentaries show the reality that the graphical method of  $T-Q$  diagram analysis belongs to Professor Adrian Bejan, who first proposed it in 1977. In addition, many instances in the literature are given to indicate disputes for the entransy principle by oppositionists of “entransy” from various countries.*

Ye *et al.* [1] studied the performance of heat transfer in evaporator under the case that the parameters of heat source and temperature of pinch point were identified. In their 1<sup>st</sup> figure, Ye *et al.* [1] utilized the graphical method of  $T-Q$  diagram analysis for preheating pinch point and vaporizing pinch point. In their 24<sup>th</sup> equation, Ye *et al.* [1] introduced the definition of entransy principle to use it in their analysis.

Firstly, Ye *et al.* [1] concealed the origin of the graphical method of  $T-Q$  diagram analysis. The  $T-Q$  diagram analysis belongs to Professor Adrian Bejan, who first proposed it in 1977 as graphic techniques for teaching engineering thermodynamics [2]. At that time, Professor Adrian Bejan was working as a post-doctoral Miller Fellow with Professor Chang-Lin Tien at the University of California, Berkeley, Cal., USA. In this method, thermodynamic temperature,  $T$ , is presented on the y-axis and heat,  $Q$ , is presented on the x-axis. The graphical method of  $T-Q$  diagram analysis is shown in Professor Adrian Bejan’s first book [3] and later in figs. 3.6 and 3.8 in his thermodynamics textbook, which is now in 4<sup>th</sup> edition [4].

In 2018, Professor Adrian Bejan mentioned this fact about the graphical method of  $T-Q$  diagram analysis in his letter to the editor-in-chief of International Journal of Refrigeration, Professor Felix Ziegler [5].

Also, three critiques of entransy were published in 2014 in ASME Journal of Heat Transfer by Professor Heinz Herwig [6], Professor Adrian Bejan [7], and the present investigator [8].

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In addition, other critiques of entransy were published in the years 2013-2018 by oppositionists of *entransy* from countries such as Italy [9], India [10], Brazil [11], and USA [12, 13].

Furthermore, the present investigator published in other journals other critiques of entransy in the period 2014-2018 [14-19].

Finally, IHTC16 put up panel discussion of entransy in China in August 2018 [20]. The 1<sup>st</sup> query was: *If the entransy is useful, can we use entransy in other countries rather than China?*. By the way, all the five *entransy* papers at IHTC16 were written by Chinese authors [21-25].

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