Dear Dr. Editor,

I am pleased to send you the enclosed manuscript entitled "Performance comparison of new and traditional arrangements of a dish-Stirling system", which we wish to be considered for publication in your prestigious journal Applied Energy.

Authors and our affiliations are listed as bellow:

- Cheng Zhang, Huazhong University of Science and Technology, Wuhan, China

- Yanping Zhang, Huazhong University of Science and Technology, Wuhan, China

- Inmaculada Arauzo, Centre of Research for Energy Resources and Consumptions, University of Zaragoza, Mara de Luna, Zaragoza, Spain

- Wei Gao, Huazhong University of Science and Technology, Wuhan, China

- Chongzhe Zou, Huazhong University of Science and Technology, Wuhan, China

In this work, we represented a novel idea of using Stirling engine array (SEA) in the dish-Stirling system to overcome its limitation of small engine capacity. To find out the influence of connection types on the performance of an SEA, connection types of SEA were classified into five basic types. A Stirling engine model considering various irreversible phenomena was developed and validated. SEA analytical models were developed based on the Stirling engine model. Different connection types of SEA were compared with various parameters. It was found that flow order has little influence on the SEA performance, and serial flows connection type is the best for an SEA to obtain best performance and adaptability for given heating and cooling fluids.

This manuscript contains original research and has not been submitted/published earlier in any journal and is not being considered for publication elsewhere. I hope this paper is suitable for Applied Energy.

We deeply appreciate your consideration of our manuscript, and we look forward to receiving comments from the reviewers. If you have any queries, please don't hesitate to contact me at the address below.

Best Regards.

Yours Sincerely,

Corresponding author:

Name: Yanping Zhang

Email: zyp2817@hust.edu.cn

Phone: +86-15927582300