回复: Rendering System Simulation Suggestions

Jiaqi Dong

Mon 14/10/2019 3:17 PM

To: Jiaying Ying <u6034298@anu.edu.au>

Dear Jiaying,

Thank you for your email. I have reviewed your project and am very impressed by the body of work you presented in the brochure.

The design seems to be well thought out. And I'm sure all the design decisions and material selections were made with technical considerations. However, if you are looking to add more simulation and analysis for the sake of validation, here are a few suggestions:

1. I understand a big portion of the system involves heating and processing a liquid or solid-liquid fluid. In the industry, the safety factors of such systems should be benchmarked by fluid dynamic (CFD) simulation results, with emphasis on the critical temperature, volume, and pressure that each system component can withhold.
2. Industrial-grade machines require a large number of resources (energy, water, etc.) to operate. Perhaps a simulation could be conducted to calculate the approximate amount of electricity, water, and other resources needed for the system to function at its designed capacity, and to determine the feasibility of its implementation in a household environment.
3. Listed as one of the key design motivations, the system is conceived to aid the battle against our diminishing natural resources. I am curious to see an analysis of its true effects on enhancing sustainability from a life cycle perspective. Similar to household PV systems, when you enlist a tool with highly-complicated parts that could be environmentally-taxing to manufacture, one needs to contemplate the overall benefit against the potential harm.

Thank you very much for the invitation. I would love to attend your project showcase.

Regards
Jiaqi

发件人: Jiaying Ying <u6034298@anu.edu.au>
发送时间: 2019年10月12日 14:21
收件人: Jiaqi Dong <jiaqi.dong@anu.edu.au>
抄送: Derek Tan <u6391332@anu.edu.au>; Andre Olivier <u5807603@anu.edu.au>; Minghui Zhang <u6065938@anu.edu.au>
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Hello Jiaqi,

We represent a group completing the ENGN4221 Capstone project and are looking for experts at computational mechanics to provide feedback on our final design. Ours is the Mobile Insect Rendering Plant Project, and Attached is our showcase poster and Audit 3 presentation, and below is a link to our brochure showing the different components and processes.

https://drive.google.com/file/d/18ASEW824wEtSn0VEekLwZEcwJYj4A6b6/view?usp=sharing

For more information, you could find them in the Project Repository (https://github.com/JessYJY/InsectFarming).

We will be really appreciated if we could have your recommendations on our final design especially about the design validation and simulation.

In addition, we warmly invite you to come to see our project showcase on the following Monday. The time is 5pm-7pm and the location is Superfloor, level 6 Marier Reay teaching Centre, Kambri.

Thanks again for the support.

Best Wishes

Insect Farming Team