Comments to the authors:

The authors do a good job of providing the reader with enough background to biomass deconstruction and laying out the advantages of simultaneous saccharification and fermentation. However, there are certain areas that could use improvement, to provide a holistic perspective to the readers:

1. There is not a significant discussion of the drawbacks of SSF approaches such as for instance, the trade-off between optimal temperature for enzymatic hydrolysis vs saccharification. The authors need to include a discussion both in section 2.2 (page 6) and eventually in the conclusions as well, to provide the reader with a balanced perspective on the pros and cons of SSF approaches
2. On page 7, the paragraph that starts with 'Most of the studies..', the authors mention that the compositions of enzyme cocktails such as Cellic C.Tec2 have not been evaluated so far. There has been work performed on using proteomics-based approaches for decoding the enzyme cocktail compositions. Authors can read through these references to understand what the ideal composition of cocktails could be, for improved biomass deconstruction
3. In the section on '3. Challenges of scalability and trends' on page 16, the authors list wastewater treatment and enzyme efficiency and cost. This is not an exhaustive list of factors that plague the lignocellulosic biomass deconstruction industry. The authors can divide this section into two sub-sections: 1. Scientific and engineering challenges faced by biomass industry in general (regardless of whether the format is separate hydrolysis and fermentation or simultaneous saccharification and fermentation) 2. Challenges associated with the SSF format vs separate saccharification and fermentation
4. In the sub-section 3.2 on 'Enzyme efficiency and cost', two improvements can be made:
    a. there is currently literature on engineering cellobiohydrolase enzymes and endocellulases so as to improve their activity and reduce enzyme loading. This literature should be discussed by the authors to present a hopeful perspective of how the enzyme cost related challenges can be overcome
    b. the authors mention only non-productive binding to lignin but there is evidence to show that non-productive binding to cellulose and hemicellulose especially via the CBM could also be a potential concern
5. To frame the reader's perspective on the economic challenges involved, the authors need to provide a better review of the literature on techno-economic analyses in section 4 on page 18. In the current version, there is a minor discussion in the sub-section on enzyme efficiency and cost but that is not exhaustive