We would like to thank **Anonymous Referee** #3 for his keen interest and valuable comments on the manuscript.

Comments: In abstract, the authors indicate the increase in hydrogen production with temperature for food waste but later on mentioned that maximum yield belongs to food waste under mesophilic temperature. Although the cumulative bio-hydrogen production and hydrogen yield are close to each other, still the reason should be given regarding this issue, though it is understood that the VS removal was higher at elevated temperature but still it should be mentioned in the abstract.

Answer: Thanks you very much for indicating this important issue. In fact it was a typing mistake at our end. The maximum hydrogen yield for food waste was observed under thermophilic conditions. It is now incorporated in abstract as "The maximum hydrogen yields of 82.47 mL/VS, 131.38 mL/COD, and 44.90 mL/glucose were obtained from thermophilic food waste, thermophilic noodle waste and mesophilic rice waste, respectively". So far VS removal is concerned; we are agreed with your point of view that VS removal efficiency increased with an increase in temperature. The increase in bio-hydrogen yield on VS basis was not so high (2.86%) against the cumulative bio-hydrogen production (23.41%), which is in agreement with said statement. This issue is also incorporated as "The increase in P with temperature for food waste was 23.41% whereas the yield increased by 2.86% only that indicated the efficient removal of VS at higher temperature."

Comment: The main objective of the paper is to study the impact of temperature along with absence of pH management practice, but in introduction this aspect was not carefully discussed.

Answer: Setting up specific initial values doesn't include in pH management practice but after incubation starts, the pH could be maintained by different ways which can increase the cost. In current research, no method was opted to control the pH during incubation and this methodology is termed as "absence of pH management practice". Now the introduction is improved as by incorporating "The pH can be controlled by automatic pH controllers, addition of nutrients and buffers, manual monitoring and control (Yasin et al., 2011;Zhu et al., 2008;Kim et al., 2004). But all these methods increase the cost of operation. Along with cost, maintaining pH at specific point is not suitable especially when mix culture is used as the response of different microbial stream could be different to same pH level. So, by co-digestion, the pH of the anaerobic digestion process can be improved and it can be further adjusted to a desired initial value by adding HCl or NaOH, which can reduce the cost of operation (Fang et al., 2006)."

Comment: I think addition of few more examples especially regarding psychrophilic conditions would be good to address this issue.

Answer: It is incorporated as "Lu et al. (2011) developed a microbial electrolysis cells (MECs) that could be operated at 9˚C by using *Geobacter psychrophilus* as dominating population and achieved hydrogen yield of $0.62 m^3 H_2 m^{-3} d^{-1}$. Heidrich et al. (2013) further modified MECs to a pilot-scale MEC and achieved bio-hydrogen production of $0.015\ LH_2 L^{-1} d^{-1}$ at 25˚C."

Comment: In methodology part, P 12827 L 25-26 need some clarification regarding the way opted to manage 10%TS with addition of extra water.

Answer: This is an important aspect as most of the studies focused on the quantities of feed stock and sludge, which can cause confusion that the study was conducted in liquid phase or solid phase. In order to keep the things simple, percentage representation was used. For better understanding, the said part of methodology is revised as "In order to achieve 10% initial TS concentration, water was added along with feedstock and sewerage sludge in the digesters. The feedstock and sewerage sludge were added in equal proportion. "

Comment: Figures 3, 5, 7 need to be redrawn as the values mentioned on axis are in small in size that they are unable to read. Increasing the font size can help to address this problem. The 3-D surface plots need support of contours so that the variation trend is understood in better way. So, I strongly recommend incorporating contours in same figure or adding another figure as composite. At the same time the discussion part should be updated in the light of contour plots for improving the quality of manuscript.

Answer: Figures are upgraded and separate contour plots were also added. The discussion is updated in the light of 2-D contours as for cumulative bio-hydrogen production "The three dimensional (3-D) response surfaces and two dimensional (2-D) contours were developed within the experimental range for each waste type by taking bio-hydrogen production as response by using above mentioned equations. The 3-D and 2-D curves of the calculated response showed the interaction of incubation time and temperature in figure 3a-c. For food waste, it is clear that the gas production increases with time and temperature from 115 mL at the starting end to 354 mL at the extreme modeled conditions. During 0-24 hours of incubation, bio-hydrogen increased with increase in temperature for food waste, i.e. 115 mL of bio-hydrogen was produced at 37°C that increased 76.09 % and 152.17% at 46°C and 55°C, respectively. During next 24 hours of incubation, bio-hydrogen production reduced with the increase in temperature, i.e. 114.5 ml bio-hydrogen was produced at 37°C and 30.78% and 91.22% reduction was observed at 46°C and 55°C, respectively. Even after reduction in bio-hydrogen production during 24-48 hours of incubation, the cumulative bio-hydrogen production increased with an increase in temperature from food waste. The impact of temperature and time can be bettered viewed in 2-D contour (Fig. 3a), which shows that the increase in temperature increase bio-hydrogen production more at 24h as compared to 72h of incubation. It also revealed the fact that first 24 hours are important for bio-hydrogen production from food waste under thermophilic temperatures and next 24 hours are important for production under mesophilic temperature, which is in agreement with findings of Shin et al (2004). Although noodle waste also produced more bio-hydrogen at elevated temperature, but the time effect was opposite to that observed for food waste. The bio-hydrogen production in noodle waste during 0-24 hours was 350mL at 37°C that was 5.4% and 10.81% decreased at 46°C and 55°C, respectively. But in next 24-72 hours, 178.57% and 357.14% increase at 46°C at 55°C, respectively.

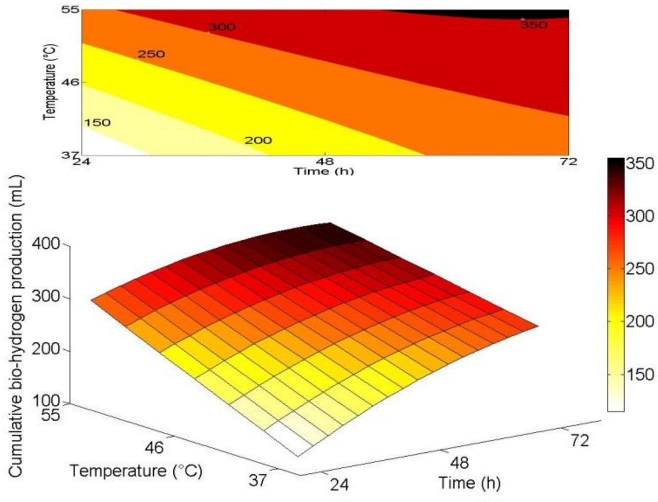
So far rice waste was concerned; it has a negative impact of temperature on bio-hydrogen production. The bio-hydrogen production in rice waste during 24-48h was 131 mL, 114.5 mL and 98 mL, which was 65.65% , 75.11% and 87.76% reduced during 48-72h under 37°C, 46°C and 55°C, respectively. The reduction in bio-hydrogen production for rice waste was in agreement with previous findings (Fang et al., 2006). The 2-D contours in fig. 3b and 3c differentiate the impact temperature with time on bio-hydrogen production for noodle waste and rice waste as the contour patterns are quite opposite to each other. ”

For glucose consumption as “During 48-72h, rate of utilization remained same as previous one but rank was slightly changed as FW>RW>NW. With an increase in temperature, during 24-72h, the rate of glucose utilization decreased for food waste but increased for noodle waste and for rice waste. The contours represented better understanding for glucose consumption and the contour varied in different manners for each waste type as shown in figure 5.”

For VFA production "The 3-D contours for food waste and noodle waste seems almost same but the contour lines for both varied in different manner. Although the production of VFA increased with time and temperature in all reactors but the intensity of change is different for each waste type as observed in figure 7."

Comment: The conclusion part should include study objective that will develop better understanding regarding the findings. Also it should strongly emphasis on opting thermophilic conditions for hydrogen production from food and noodle waste

Answer: It is revised as "Food waste and its two major derivatives, i.e. noodle waste and rice waste, were co-digested with sewerage sludge to produce bio-hydrogen with an initial pH of 7 under mesophilic and thermophilic conditions. The pH was not controlled throughout the incubation. The most effective VS removal was observed in noodle waste reactor that produced the highest experimental cumulative bio-hydrogen of 656.5 mL under thermophilic conditions. The food waste possessed the highest bio-hydrogen yield calculated on the basis of $VS_{removed}$ that represents an efficient conversion of VS into bio-hydrogen. The increase in temperature within the studied range increased the bio-hydrogen production in food waste and noodle waste reactors. The rice waste reactor represented the negative impact of increasing temperature on bio-hydrogen and VFA production. The thermophilic conditions should be preferred for bio-hydrogen production as most of the time food waste is used as feed stock."



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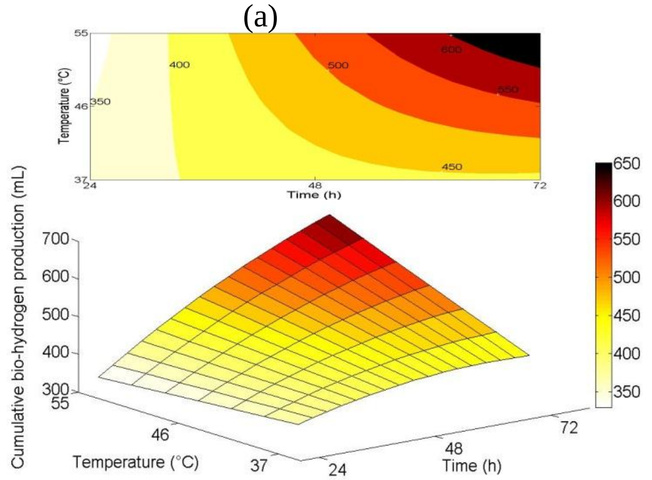

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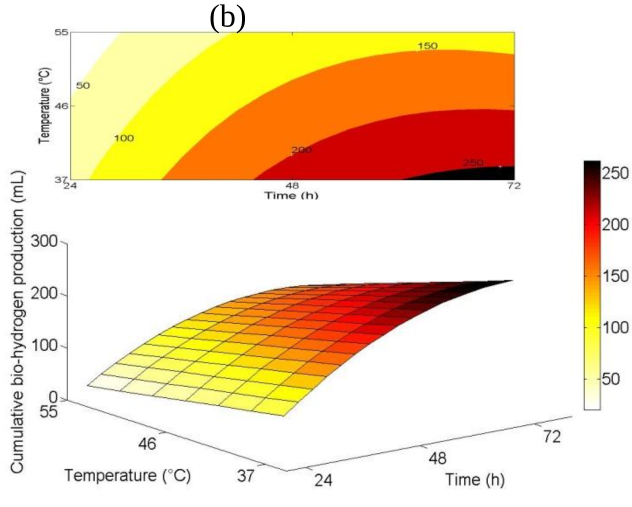
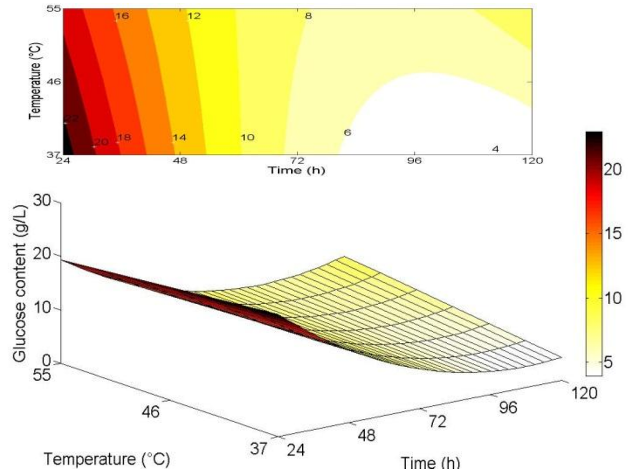


(c)

Figure 3. Three dimensional response plots for bio-hydrogen production (a) FW, (b) NW, (c) RW



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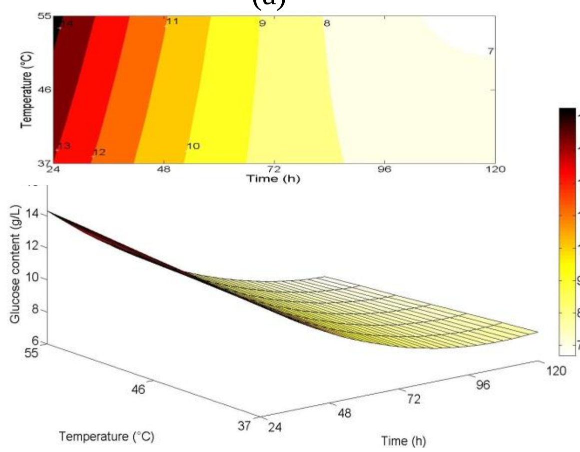

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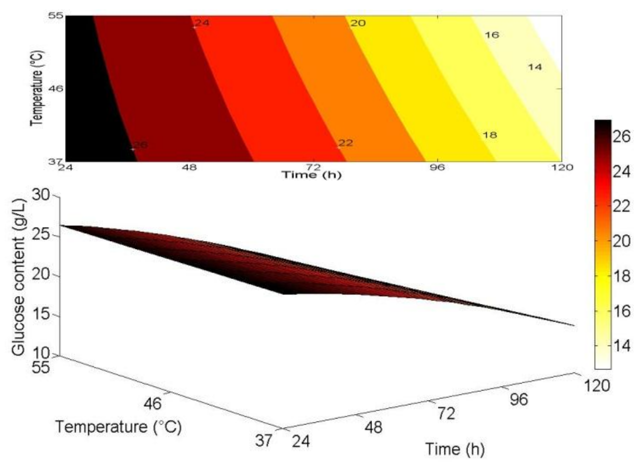

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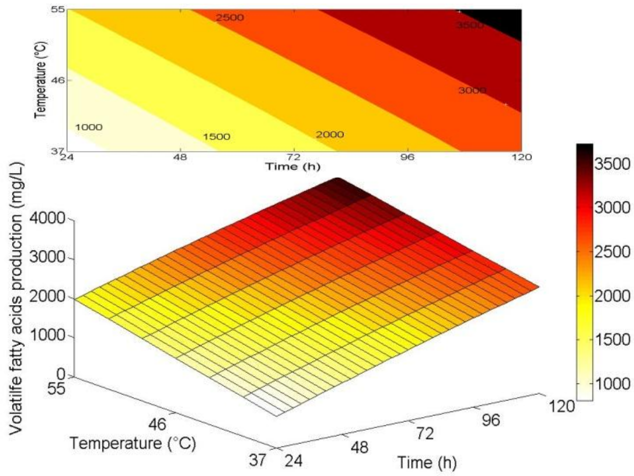
Figure 5. Three dimensional response plots for glucose consumption a) Food waste, (b) Noodle waste, (c) Rice waste



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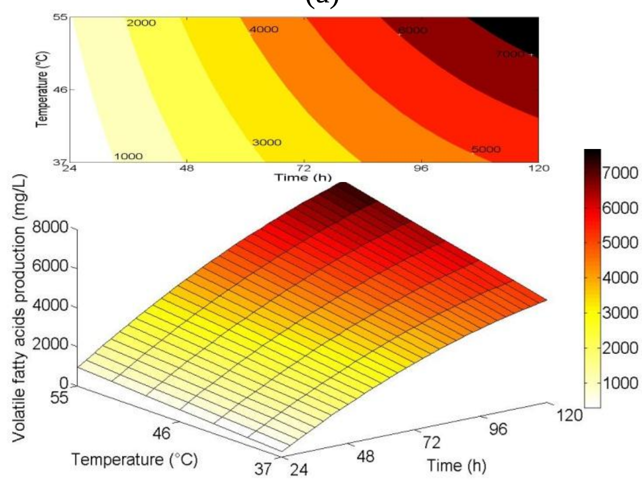

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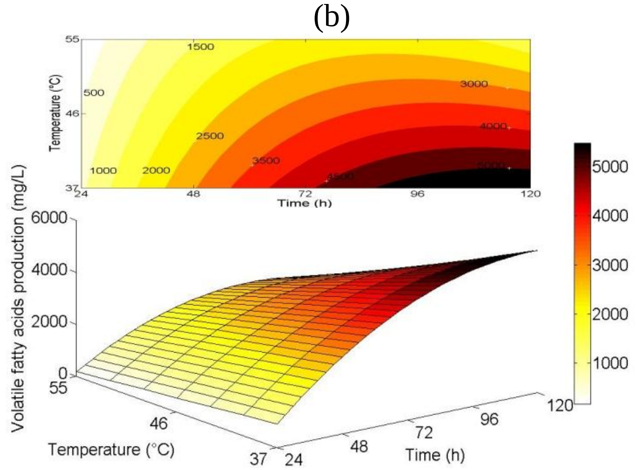

(c)

Figure 7. Three dimensional response plots for VFA production a) Food waste, (b) Noodle waste, (c) Rice waste