**Dear Prof. Heng-Kwong Tsao:**

Thank you for your letter and for the reviewers’ comments concerning our manuscript entitled “**Progressive Molecular Rearrangement and Heat Generation of Amorphous Polyethene Under Sliding Friction: Insight from the United-Atom Molecular Dynamics Simulations**” (ID: **la-2020-019497**). Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. The main corrections in the paper and the responds are as flowing:

1. **Comment:** Authors’ first name and last name can’t be abbreviated. Please contact the author to complete the authors’ name (Gerhard Ziegmann) in the system.
2. **Reply:** Thank you for your remind. We have contacted the the author (Gerhard Ziegmann), and the content in the system will be corrected as soon as possible.
3. **Comment:** Experimental OR Materials and Methods section is missing.
4. **Reply:** Thank you for your remind. The section titles in our manuscript has been modified.
5. **Comment:** "Results" and "Discussion" sections should be combined. The main text of the manuscript must be divided into sections. There are Abstract, Introduction, Experimental, Results (with Discussion), Conclusions. Please check and correct the sections.
6. **Reply:** Thank you for your remind. Our manuscript now has been divided into following parts: *Abstract*, *Introduction*, *Experimental Section*, *Results and Discussion*, *Conclusions*, which meets the requirements. The original discussion part has been added into the*Results and Discussion* section, **related edits have been added in the manuscript:**

“The initial temperature rise stage is closely related to interfacial structure change caused

by chain motion in the friction process related **…** In contrast, the high degree of orientation caused by SSF leads to a more uniform contact, in which and the body temperature causes heat generation. The different heat generation mechanism also indicates the significance of molecular rearrangement on heat generation.” (**Results and Discussion section, Page 19, line 1 to Page 20, line 14**)

As sliding friction progresses, different temperature equilibrium stage was found in two friction modes, which is possibly related to the **…** Studies about chemical effect on friction process needs to be further investigated. (**Results and Discussion section, Page 24, line 4 to Page 26, line 2**)

1. **Comment:** Journals in references should be well abbreviated.
2. **Reply:** Thank you for your remind. All formats have been modified as required.
3. **Comment:** Full page number is missing in reference 32.
4. **Reply:** Thank you for your remind. The missing page number has been filled in.

Thank you and best regards.

Yours sincerely,

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