Response to Reviewer 1 Comments

Point 1: Characterization of the polymers used, especially PBE, and the blends – please expand this section [useful references: https://doi.org/10.3390/polym11121976, https://doi.org/10.1080/00222348.2013.857536 and references therein};

Response 1: Thanks you for all the good references suggested. They are all included in the article.

Point 2: How the processing conditions were chosen / optimized?

Response 2: As I better specify in the article, the processing condition for the extrusion were chosen thanks to a previous study of Javadi Toghchi et al. which used the same materials (PA6.6 and CNT).

Point 3: „Rheological properties characterization" section is limited only to MFI determination; rotational rheometer should be applied to study the complex viscosity vs frequency, and to discuss shear-thinning behaviour, as well as Cole-Cole plots. Importantly, the results obtained could complete/verify the conclusions drawn from SEM/TEM.

Response 3: The rotational rheometer is very interesting and would provide additional information. But for the moment in this article, we focused on the MFI because it allows a good evaluation of the spinnability of the blends.

Point 4: What is the repeatability and accuracy of the monofilament sensor PA6.63CNT70/PBE30?

Response 4: We did not work yet on the repeatability of the detector filament. First, we wanted to develop the right formulation to develop the multifilament by melt spinning. The modification of the structure from monofilament to multifilament may improve the accuracy of the detector and then a study of the repeatability can be done.

Point 5: Please add as a general reference: Ana Zubiarrain-Laserna and Peter Kruse 2020 J. Electrochem. Soc. 167 037539.

Response 5: Thanks you for all the good references suggested. They are all included in the article.