Response to Reviewer 4 Comments

**Point 1:** How can a piezoelectric sensor be utilized here?

**Response 1:** The PVDF sensor are fixed in pipes. A stable wind field is formed in the duct and the direction of wind flow is parallel to the surface of the sensor. The sensor generates electrical output due to the excitation of wind.

**Point 2:** How does the sensor behave in response to the drag force generated by the air flow?

**Response 2:** The PVDF sensor only behave in response to the forces that are perpendicular to the surface. In other words, the drag force has no effect on the electrical output of the sensor.

**Point 3:** What are the effects of vortex-induced vibrations generated in the film and how can they influence the flow measurements?

**Response 3:** The vortex-induced vibrations deforms the PVDF film and make PVDF film produce electrical output. The vortex-induced vibration intensity of PVDF film is different at different flow velocity, which results in different electrical output of PVDF film. In this paper, we do the flow measurements by giving the relationship of the electrical output and the flow velocity.

**Point 4:** The electrode design to collect voltage charges generated from the film is unclear.

**Response 4:** As shown in figure 2, the electrode on one surface of the PVDF film was divided into 4×3 blocks (a total of 12 array elements). The elements are insulated from each other.

**Point 5:** Since all the electrodes are patterned on the single PVDF film, it is unclear how the cross actuation and voltage generation between sensors could be distinguished from the actual individual sensor output.

**Response 5:** According to theory in section 2.1, there are 12 basic rectangular capacitive structures in one sensor. Each element of the electrode is connected to a wire to provide an electrical output. Cross actuation doesn’t exist in my PVDF film. More details are shown in section 4.1.

**Point 6:** Although an array of sensors were developed no flow profile results were provided.

**Response 6:** At the end of section 4.3, the PVDF sensor is used to measure the flow velocity
Figure 12 provides the percentage errors between the wind speed measured by the PVDF pressure film sensor and the actual wind speed (Maybe this goes further than giving the flow profile results directly).