



UNECE EVS-IWG

OICA comments on EVS25-E1TP-0500
EVS #26 meeting
2023

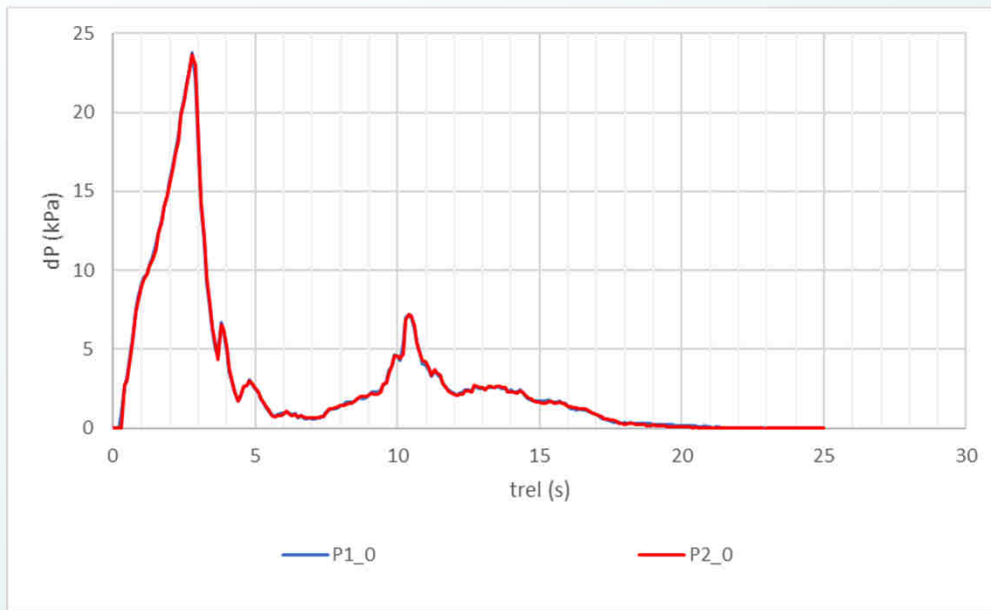


Feedback on Rate of change of pressure

- JRC proposed Rate of change of pressure in the pack combined with rate of change of measured cell temperature for at least 3s as a potential TR criteria set:
- $dP_{\text{pack}} dt > 0.01 \text{ bar/s} + dT_{\text{cell}} dt > 1 \text{ C /s}$ for at least 3s
- OICA wants to share some additional data for discussion



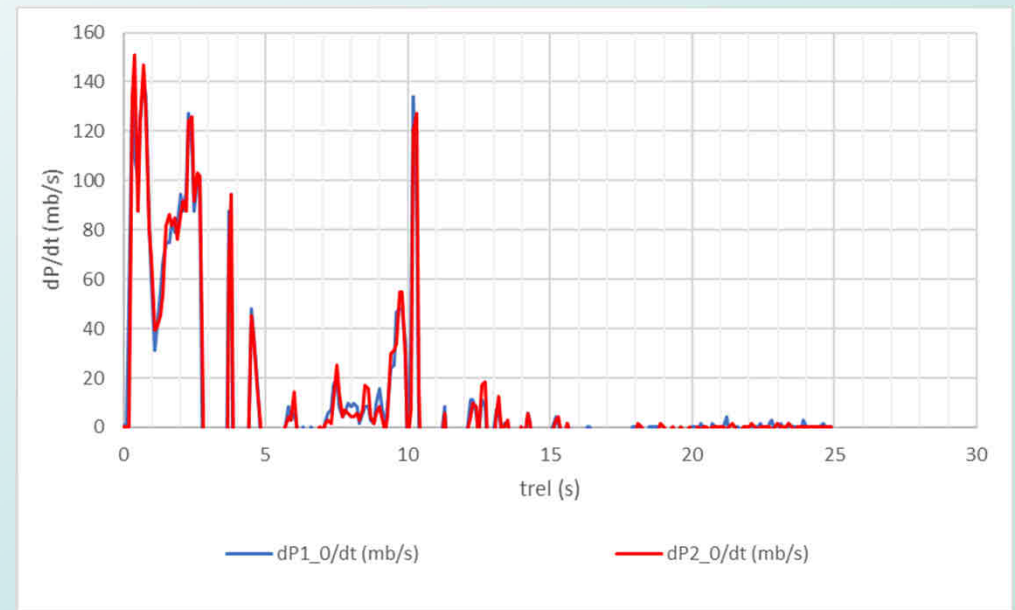
Case 1 : NMC pack with thermal propagation without fire nor explosion nor rupture.
For the pack pressure following the thermal runaway of the triggered cell we have



We obtain 240mb peak when the venting valve open.

Feedback on Rate of change of pressure

The derivative of the pressure in mb/s is :

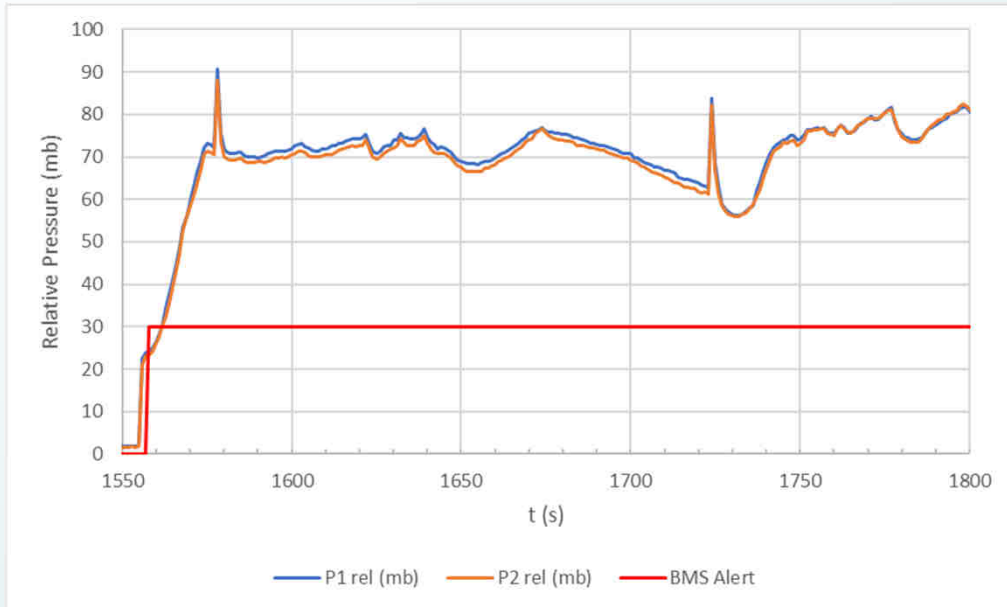


A lot of thin peaks. So $dP_{pack}/dt > 0.01 \text{ bar/s}$ for at least 1s vs 3s to reduce false detection?



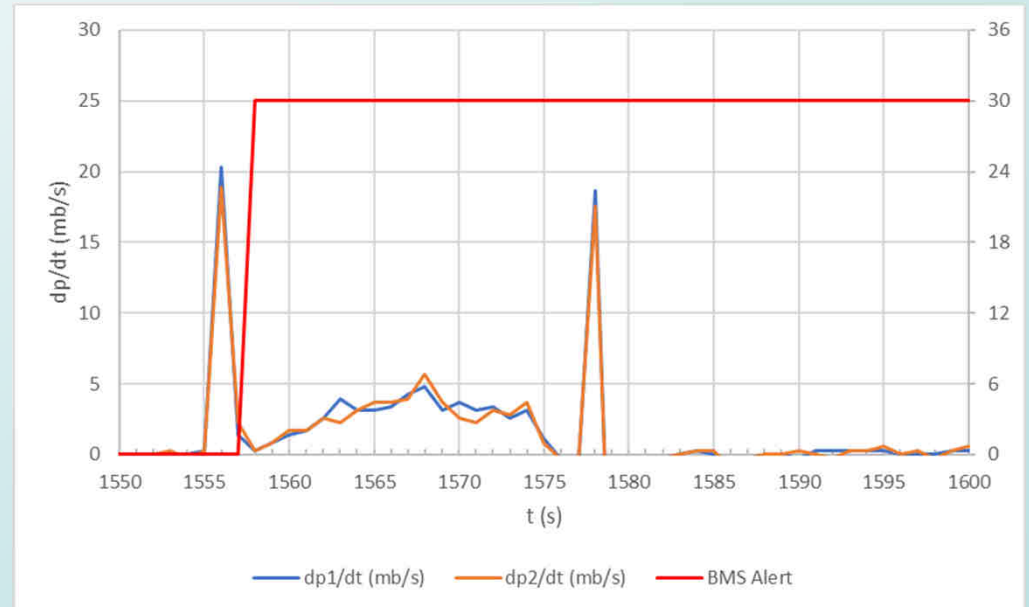
Case 2 : For LFP, the behaviour is different. For the pack pressure we have (70mb reversible venting valve in this case):

For the pack pressure following the thermal runaway of the triggered cell we have



Feedback on Rate of change of pressure

The degassing phenomenon is much longer than with NMC. During the first seconds the derivative curve dp/dt :



The dp/dt is low.

A criteria $dP_{pack} dt > 0.005 \text{ bar/s}$ during at least 1s for some chemistries could be more suitable ?