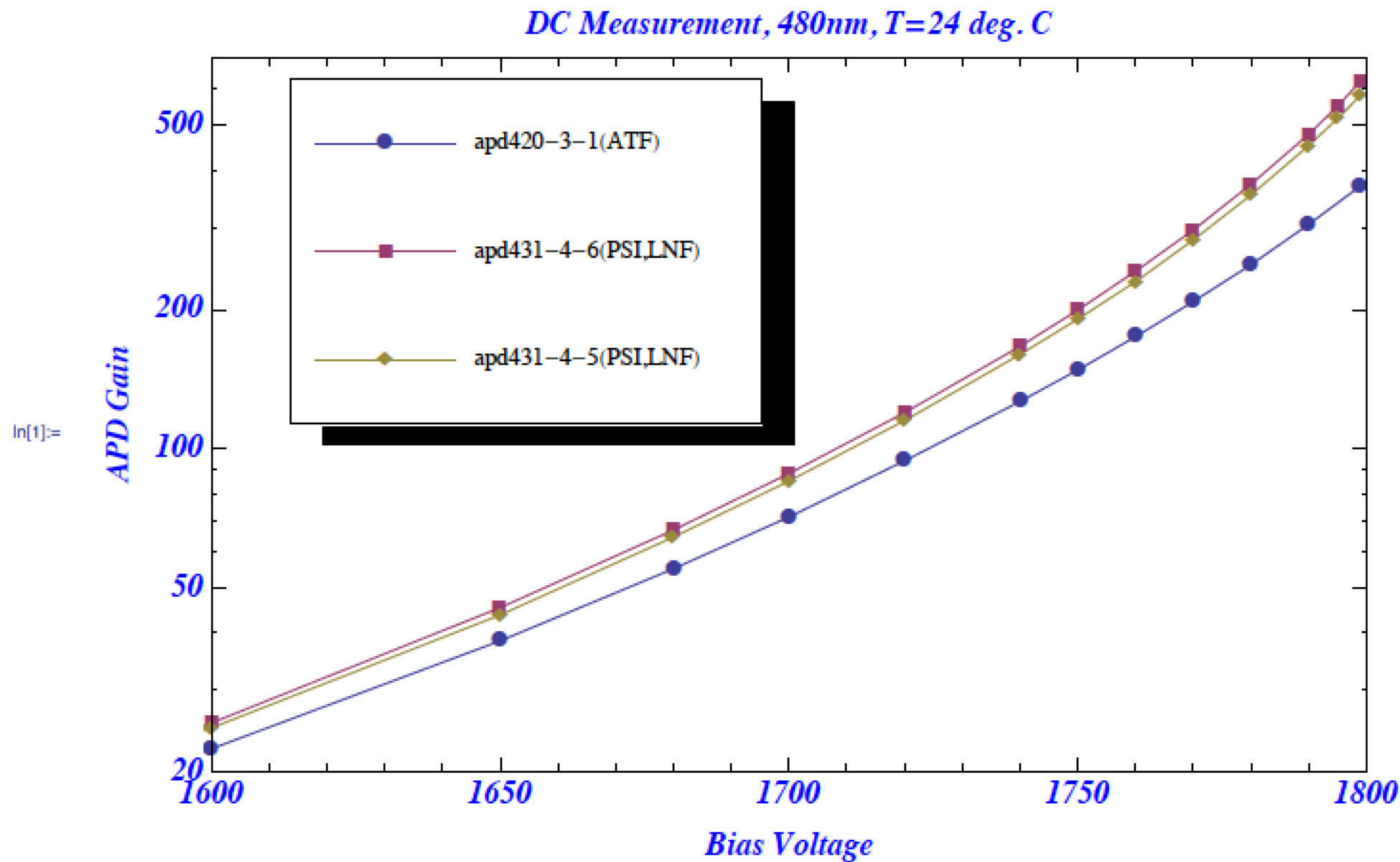


First calculate expected signal amplitude for min. ionizing particle in the $8 \times 8 \text{ mm}^2$ APDs (area enters because this has large capacitance leading to a loss in peak amplitude into a 50Ω voltage amplifier - by a bit over a factor of 10).



```
ln[2]:= ehpairs = 90; thick = 40; GAPD = 530.; tpulse = 5 * 10-9; Qe = 1.6 * 10-19; R = 50.;
Q = ehpairs * thick * GAPD * Qe;
ipeak = Q / (tpulse / 2);
vpeak = ipeak * R
```

Out[5]= 0.0061056

Conclusion : We should expect an input signal with peak amplitude of about 6 mV into the preamp and should take into account a factor of about 10 reduction for the capacitance.