

# Single channel uRWELL PICOSEC prototypes

Analysis results  
(June 2024 test beam)

# In June test beam 2024, following prototypes have been tested:

## **Single channel uRWELL prototypes with CsI photocathode**

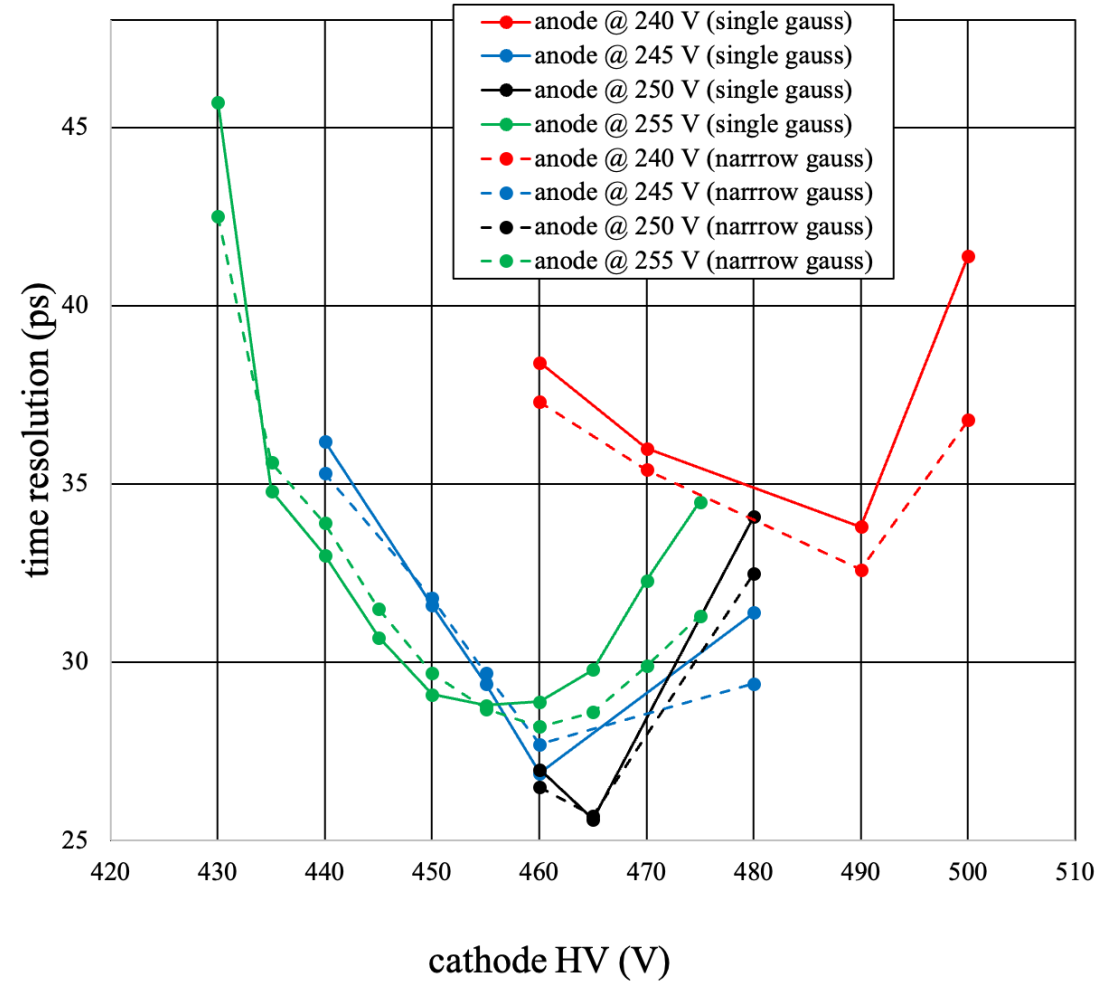
- uRWELL13: Square P:80, H(o):60 H(i):40, Spacer 170 um, Readout: Plain
- uRWELL9: Round P:100, H(o):80 H(i):60, Spacer 170 um, Readout: Plain
- uRWELL5: Round P:120, H(o):100 H(i):80, Spacer: 170 um, Readout: Plain
- uRWELL7: Round P:120, H(o):100 H(i):80, Spacer: 170 um, Readout: Grided
- uRWELL11: Round P:100, H(o):80 H(i):60, Spacer 170 um, Readout: Grided
- uRWELL1: Square P:120, H(o):100 H(i):80, Spacer 170 um, Readout: Plain

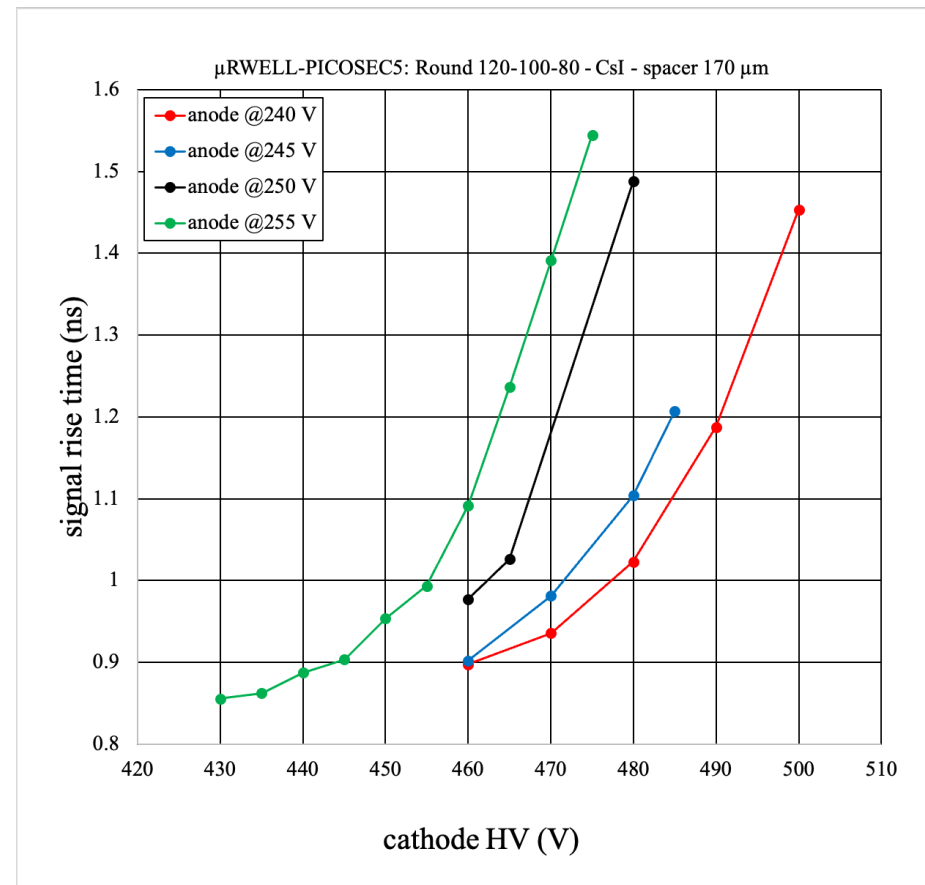
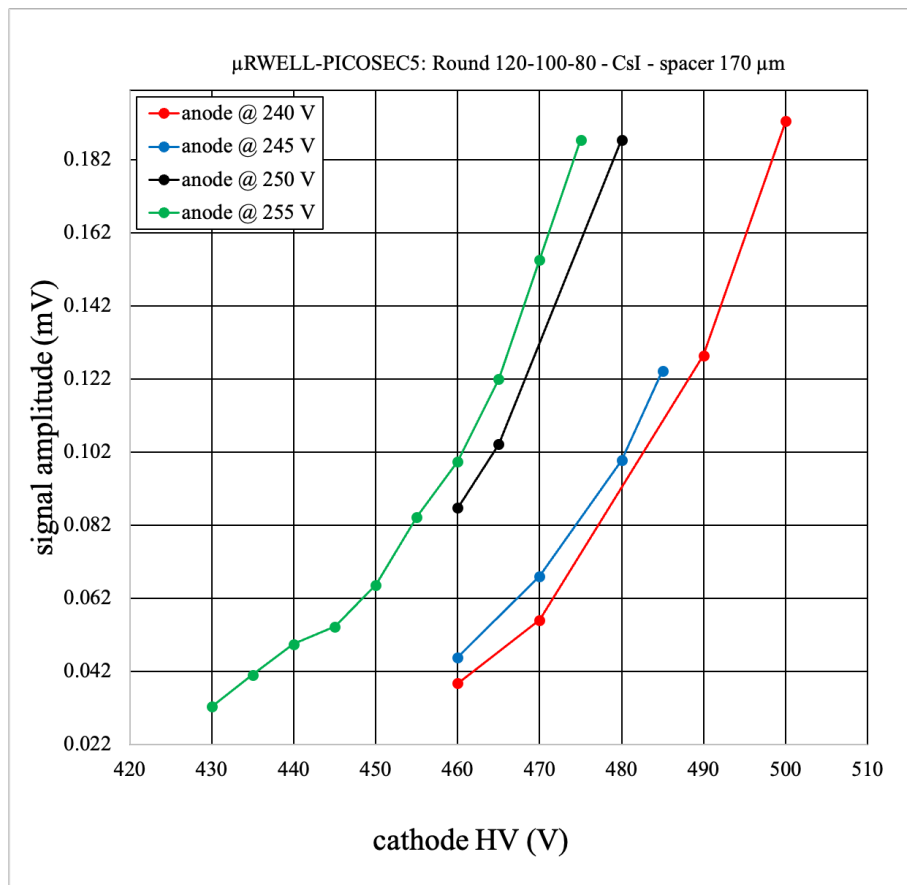
## **Single channel uRWELL prototypes with DLC photocathode**

- uRWELL9: Round P:100, H(o):80 H(i):60, Spacer 170 um, Readout: Plain
- uRWELL1: Square P:120, H(o):100 H(i):80, Spacer 170 um, Readout: Plain
- uRWELL5: Round P:120, H(o):100 H(i):80, Spacer: 170 um, Readout: Plain
- uRWELL13: Square P:80, H(o):60 H(i):40, Spacer 170 um, Readout: Plain
- uRWELL11: Round P:100, H(o):80 H(i):60, Spacer 170 um, Readout: Grided
- uRWELL3: Square P:120, H(o):100 H(i):80, Spacer 170 um, Readout: Grided

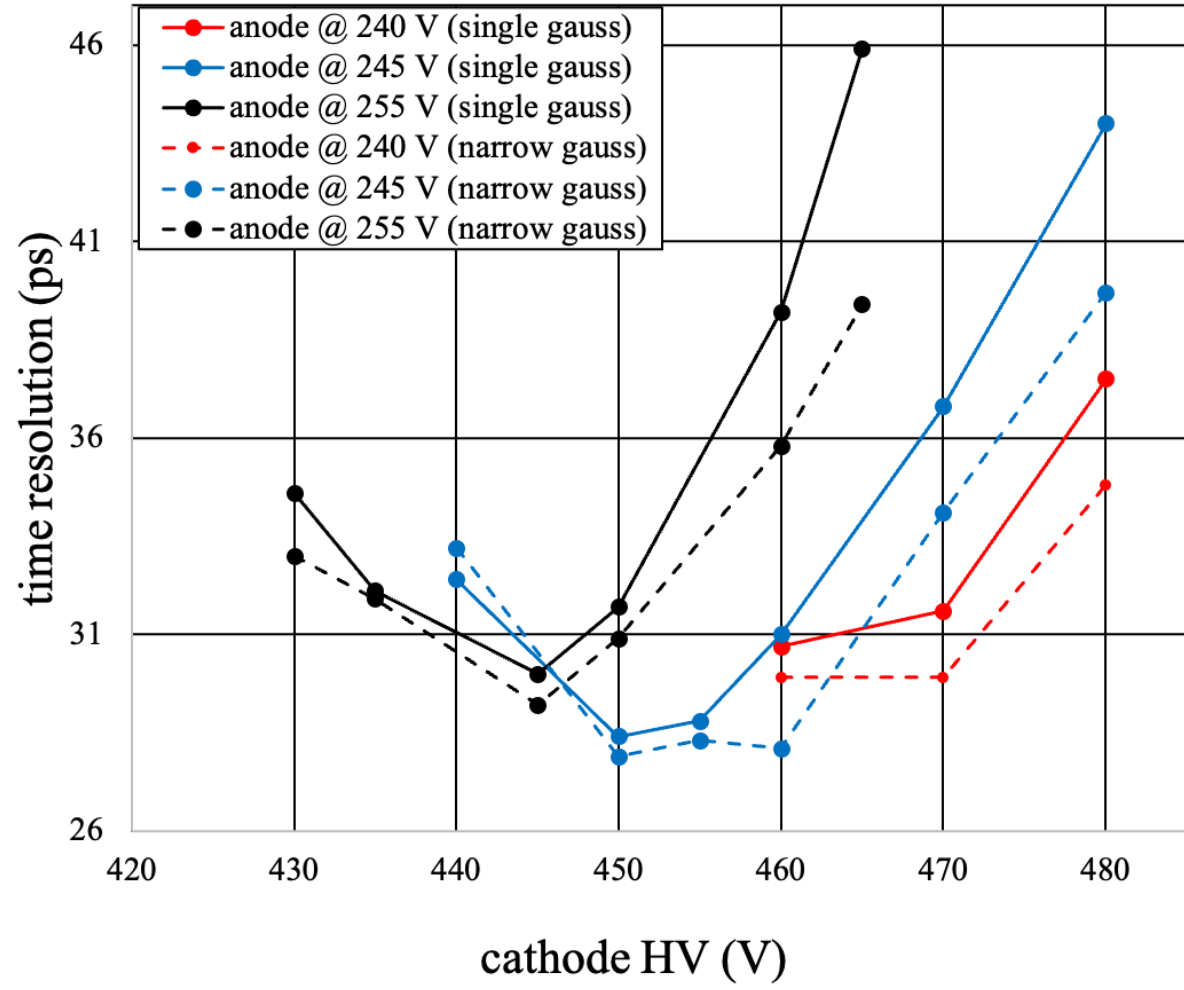
# **Results of uRWELL single channel prototypes with CsI photocathode**

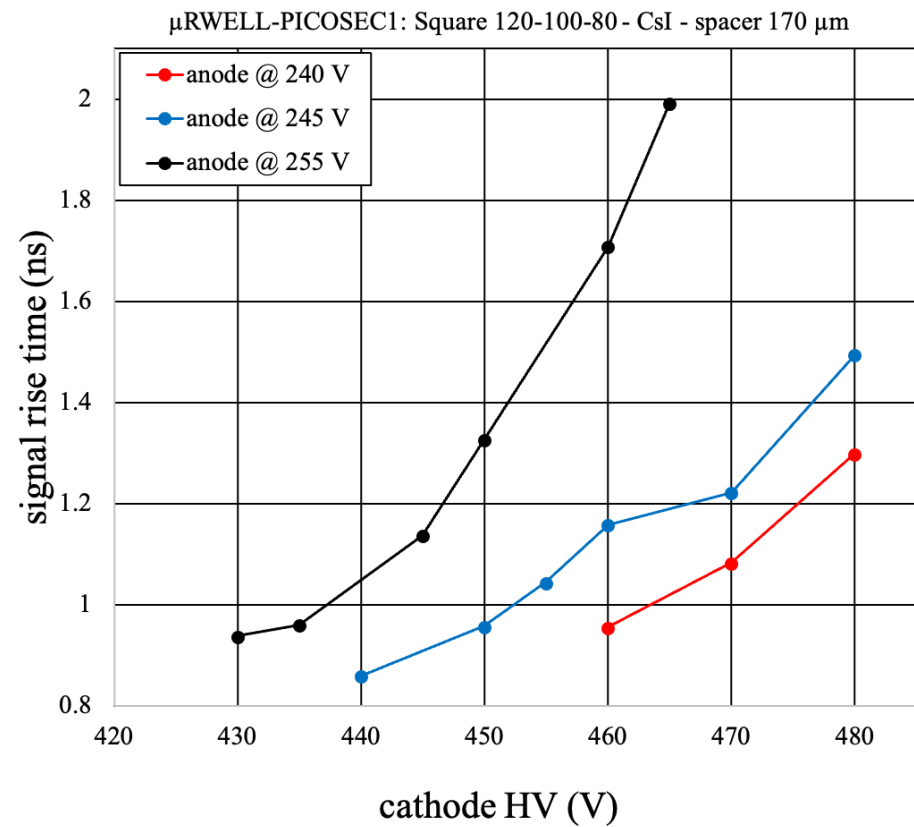
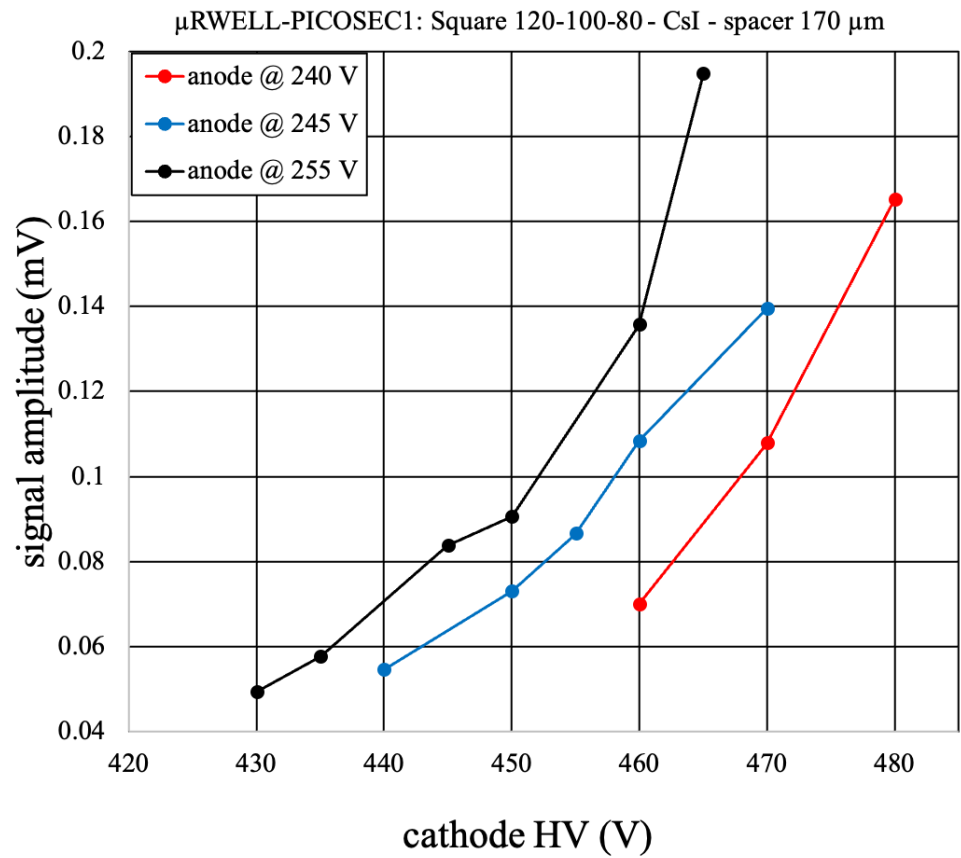
$\mu$ RWELL-PICOSEC5: Round 120-100-80 - CsI - spacer 170  $\mu$ m



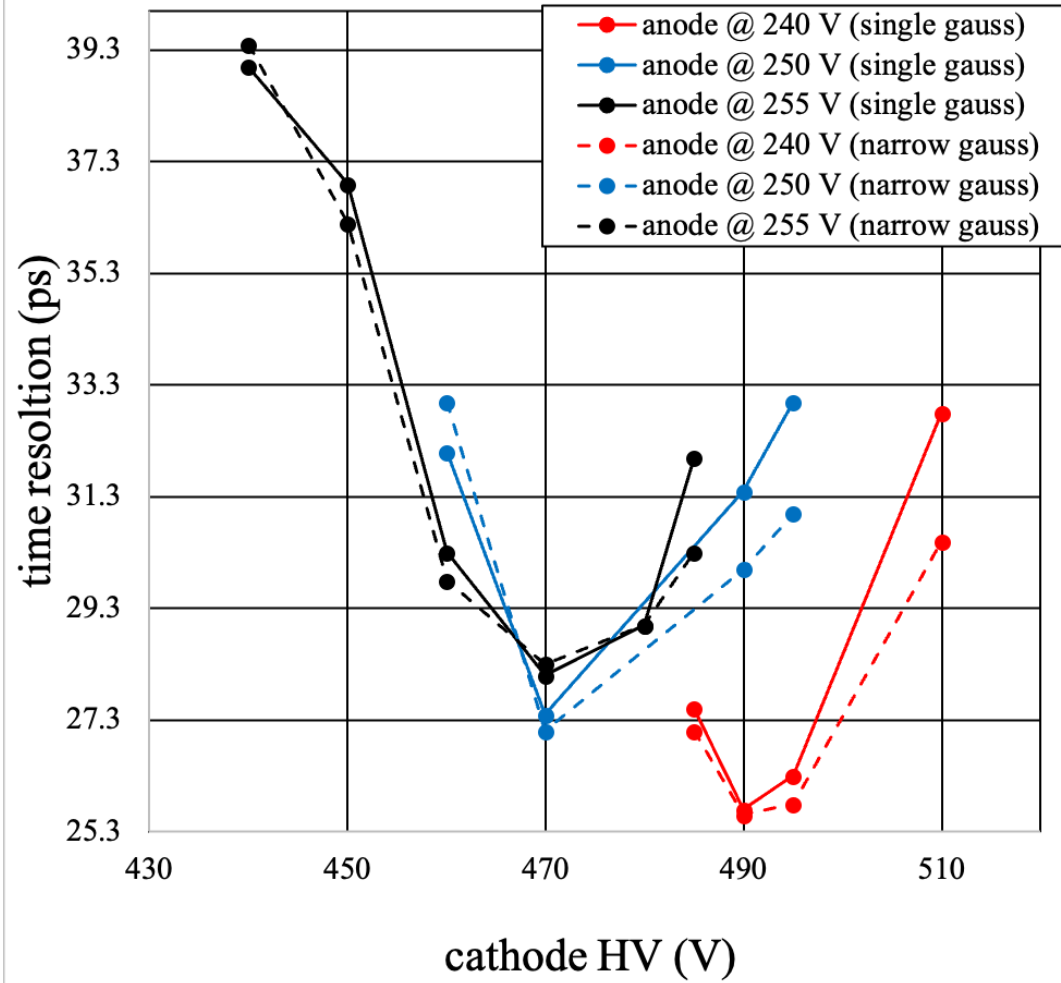


$\mu$ RWELL-PICOSEC1: Square 120-100-80 - CsI - spacer 170  $\mu$ m

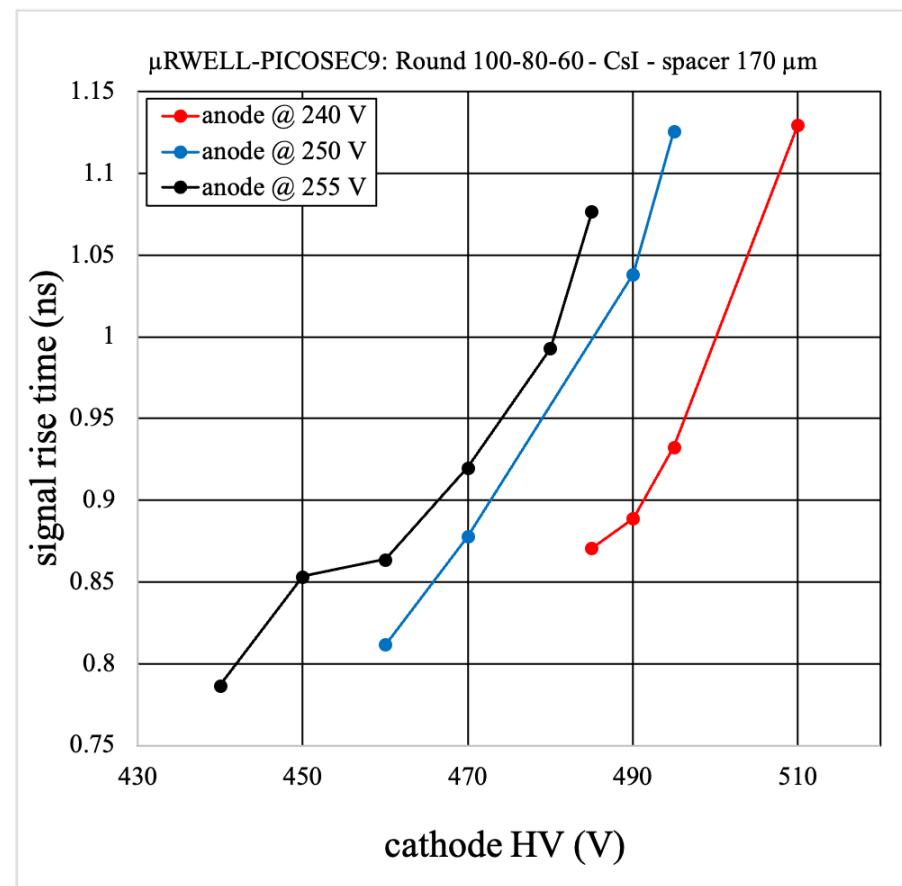
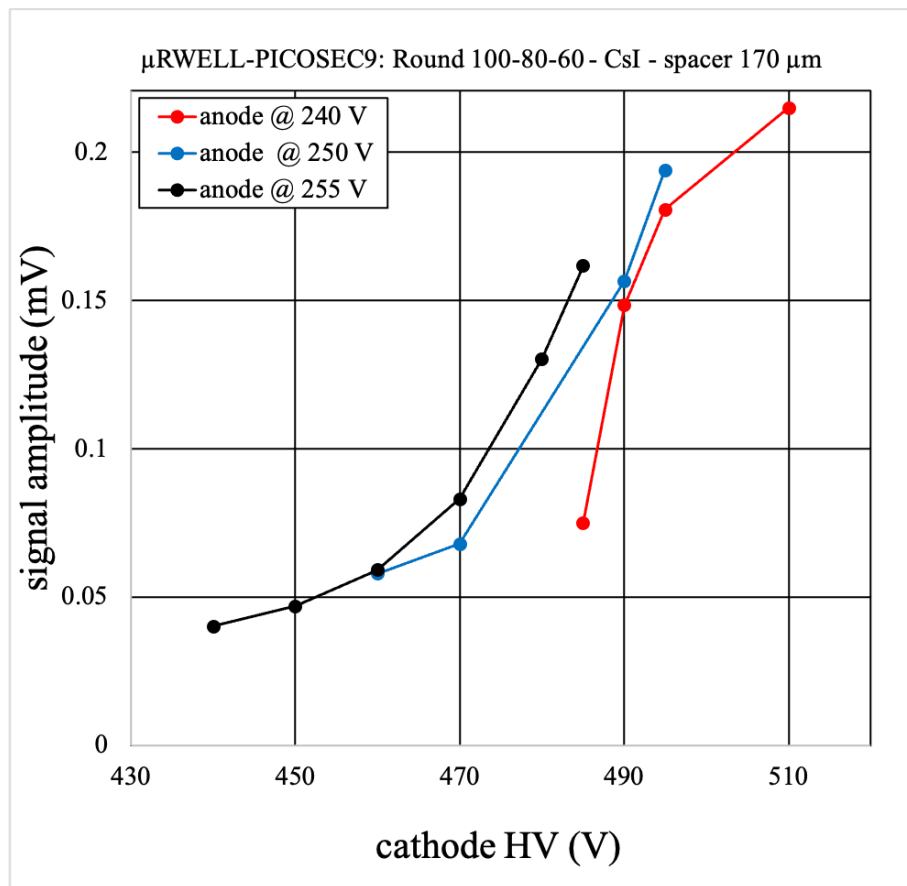




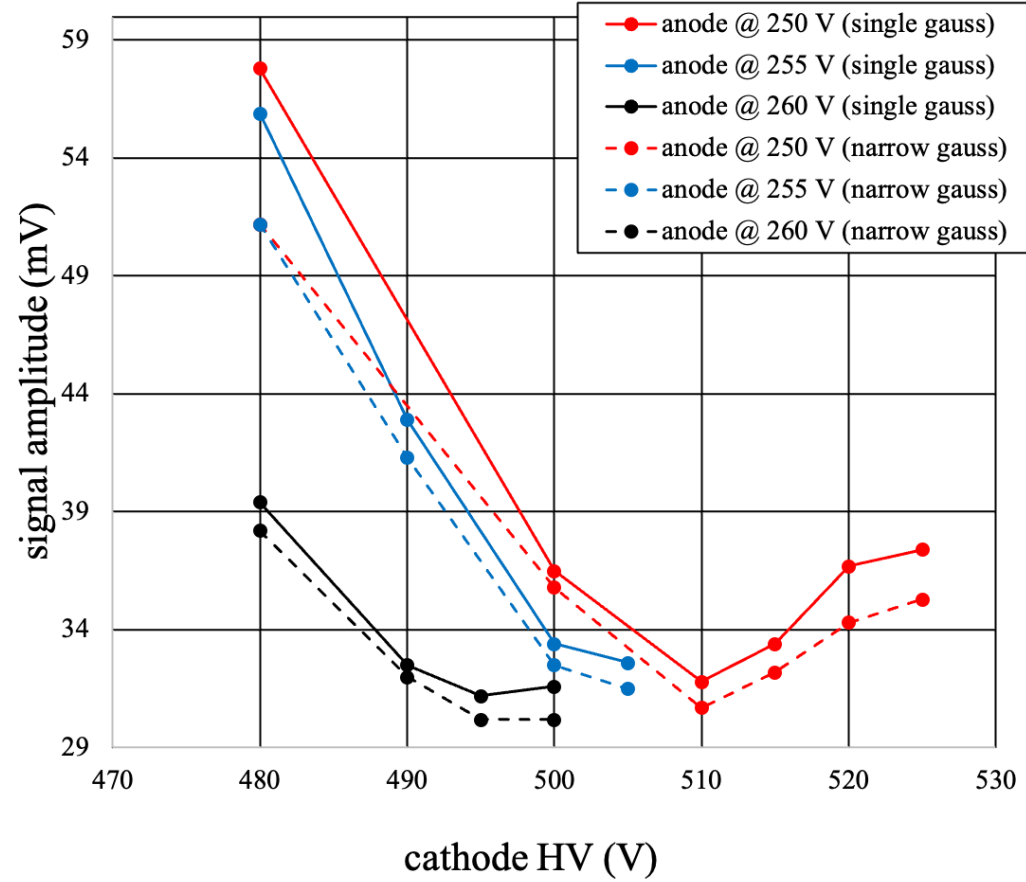
$\mu$ RWELL-PICOSEC9: Round 100-80-60 - CsI - spacer 170  $\mu$ m

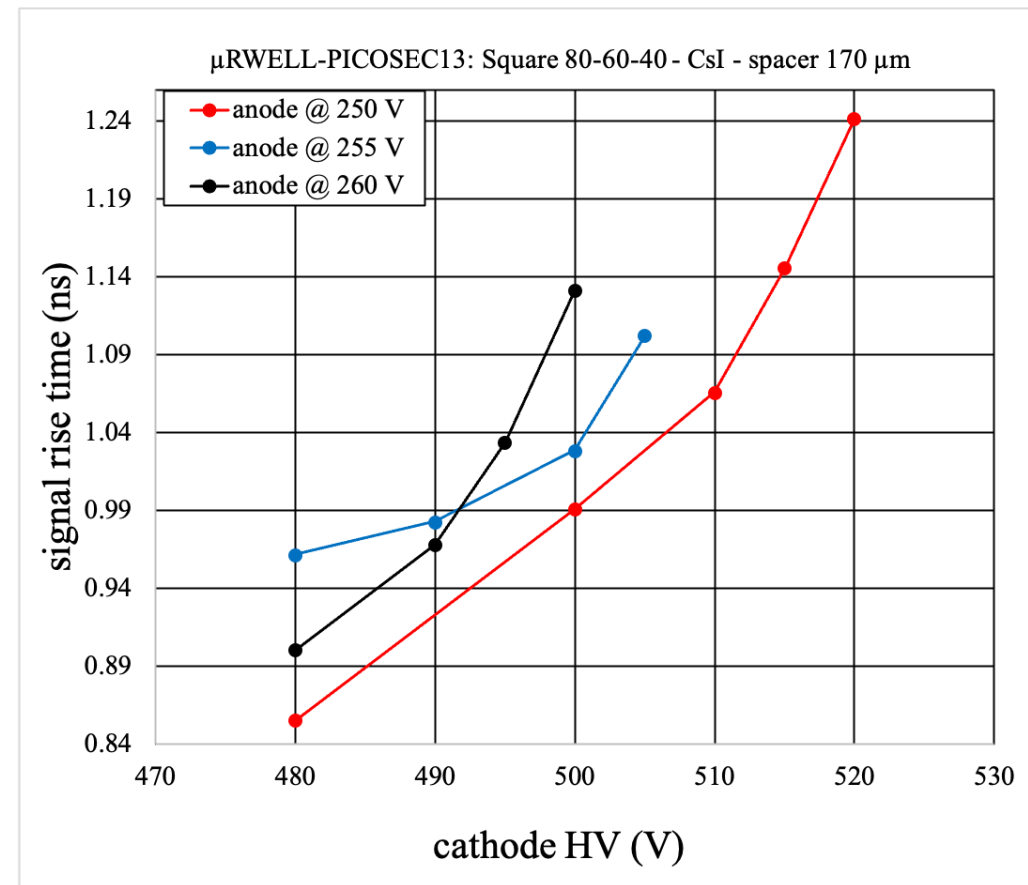
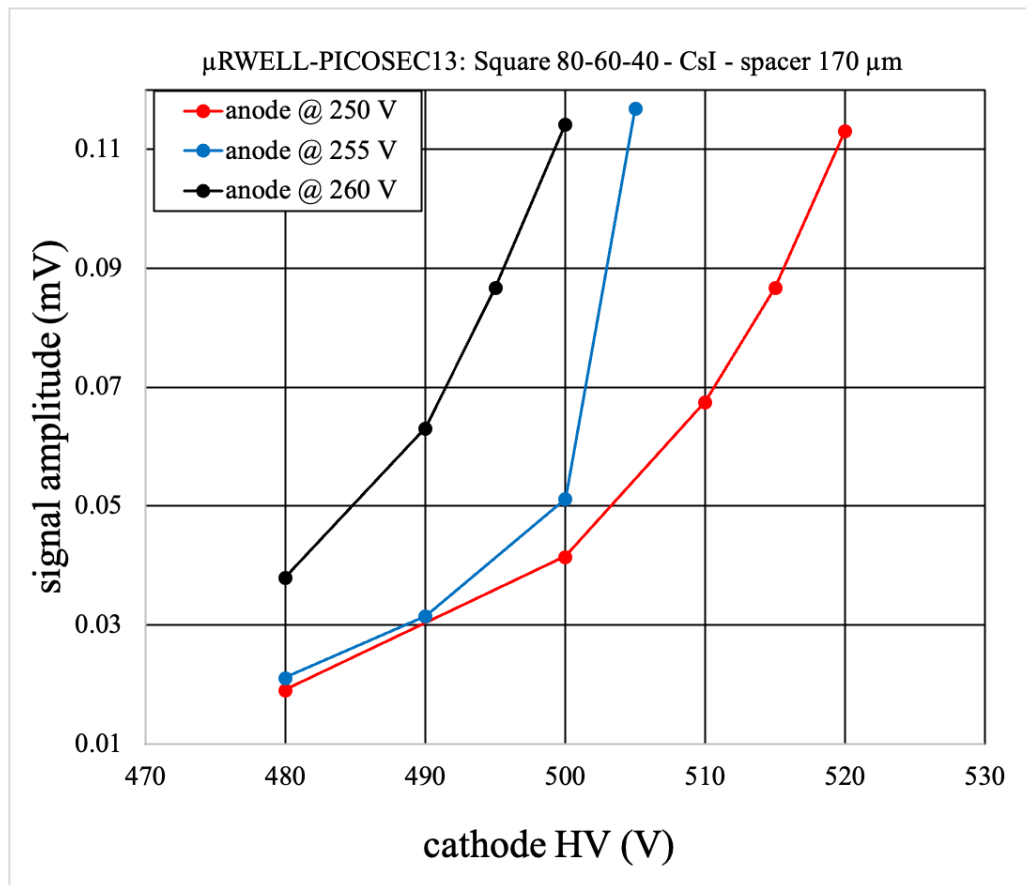




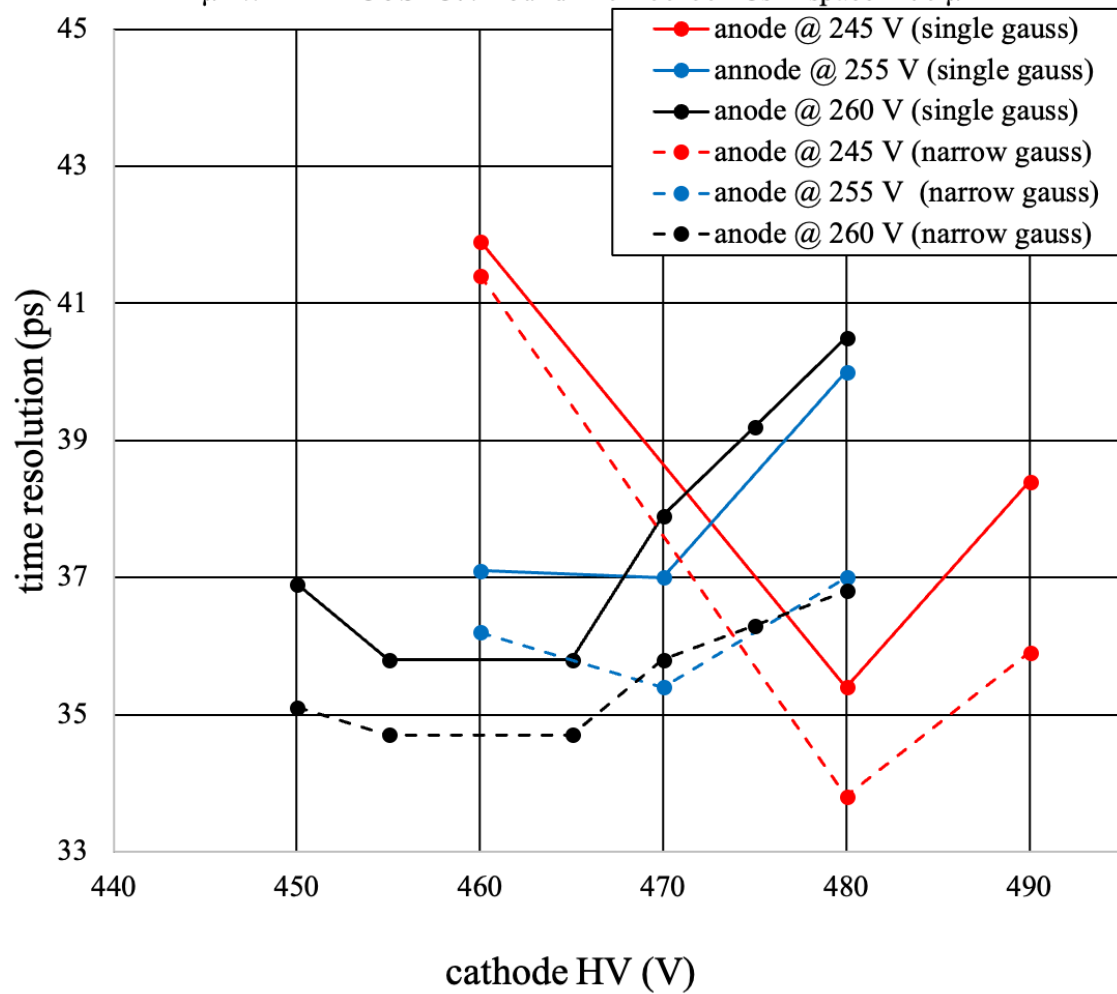


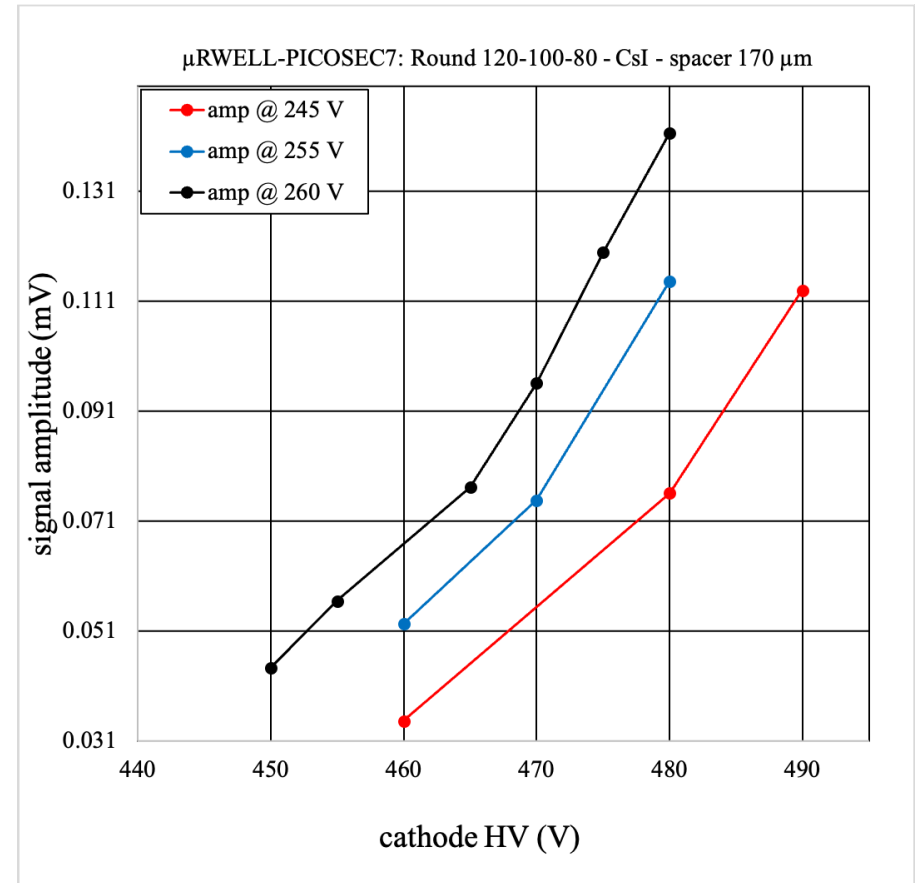
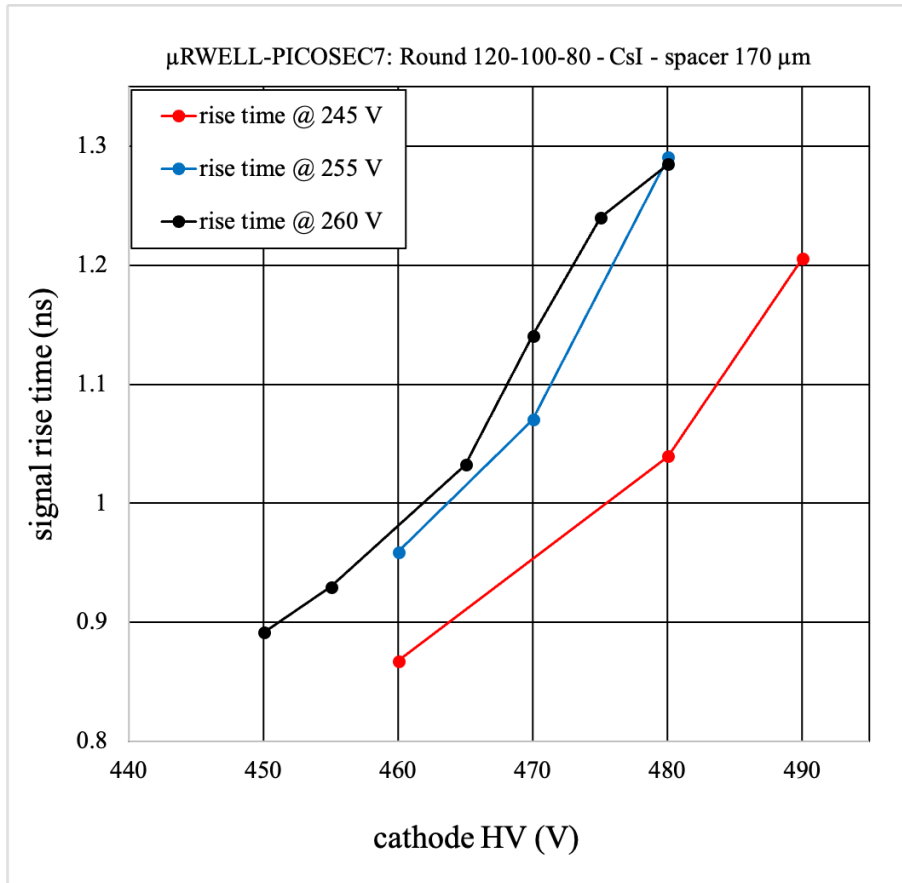
$\mu$ RWELL-PICOSEC13: Square 80-60-40 - CsI - spacer 170  $\mu$ m



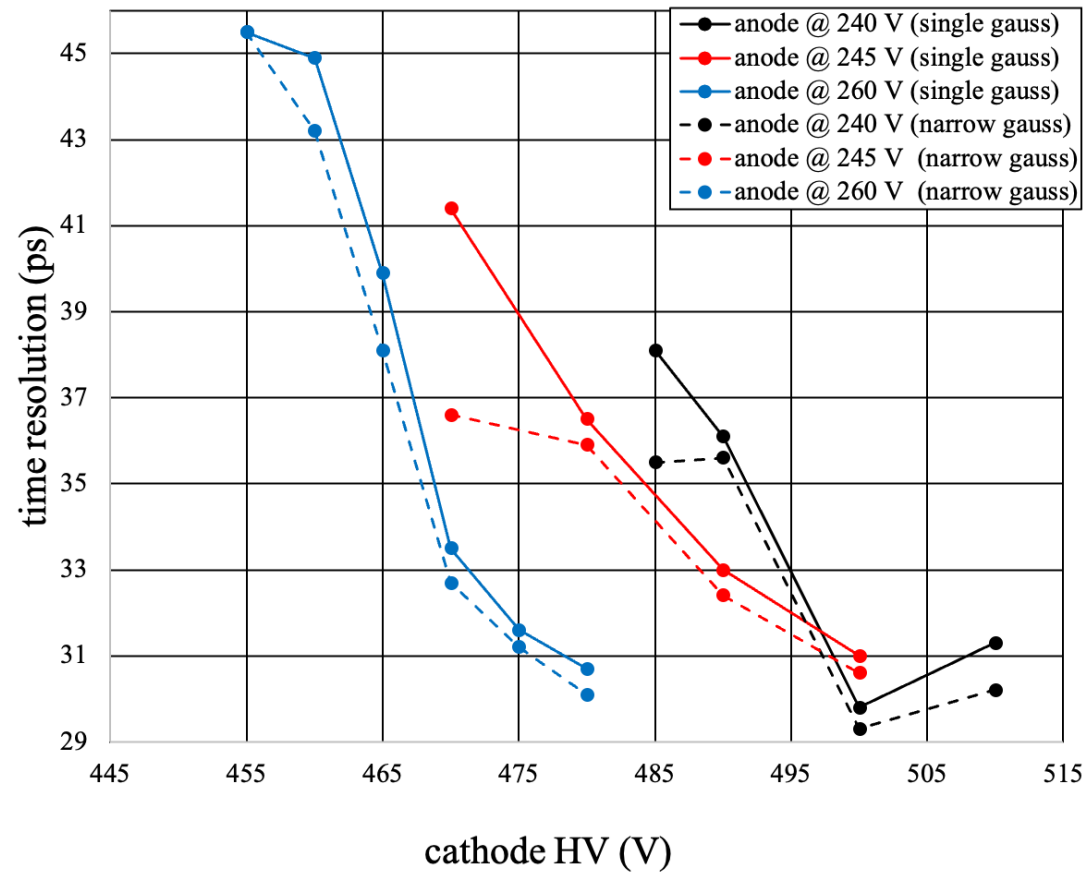


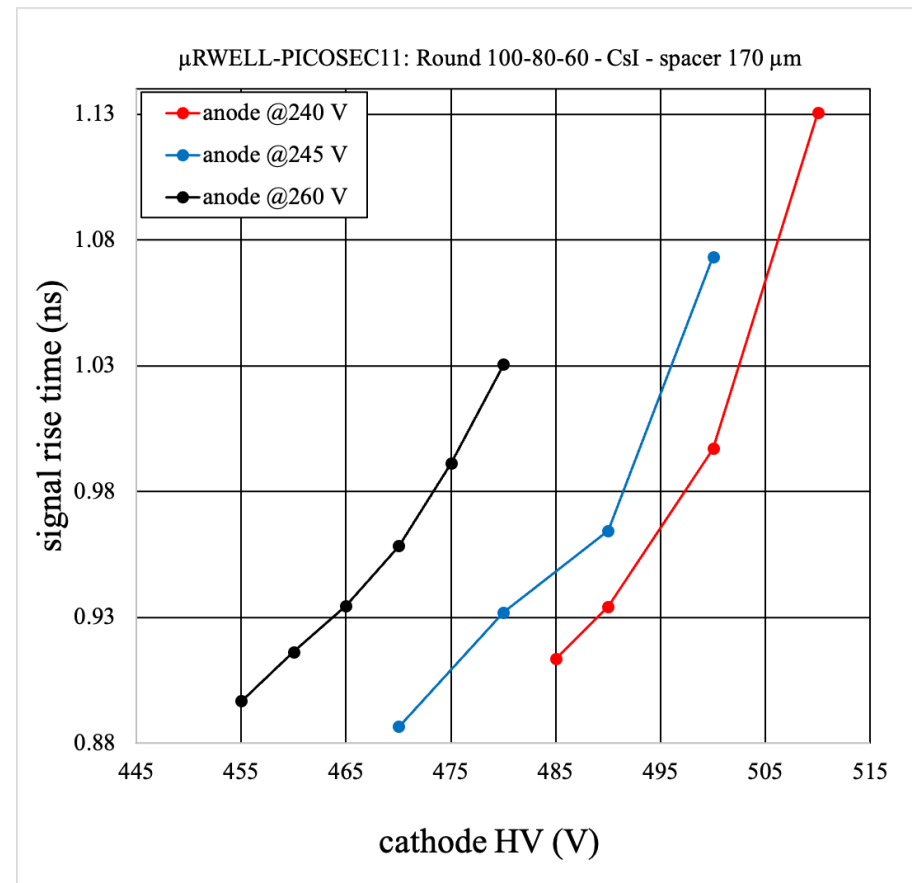
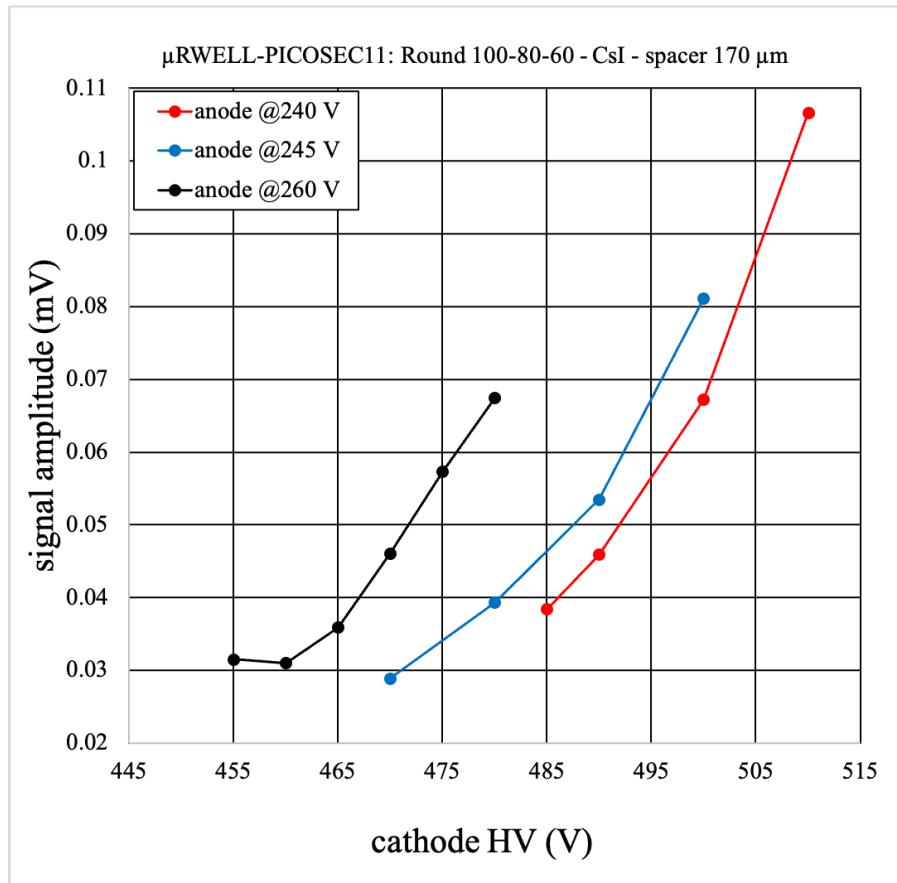
$\mu$ RWELL-PICOSEC7: Round 120-100-80 - CsI - spacer 170  $\mu$ m





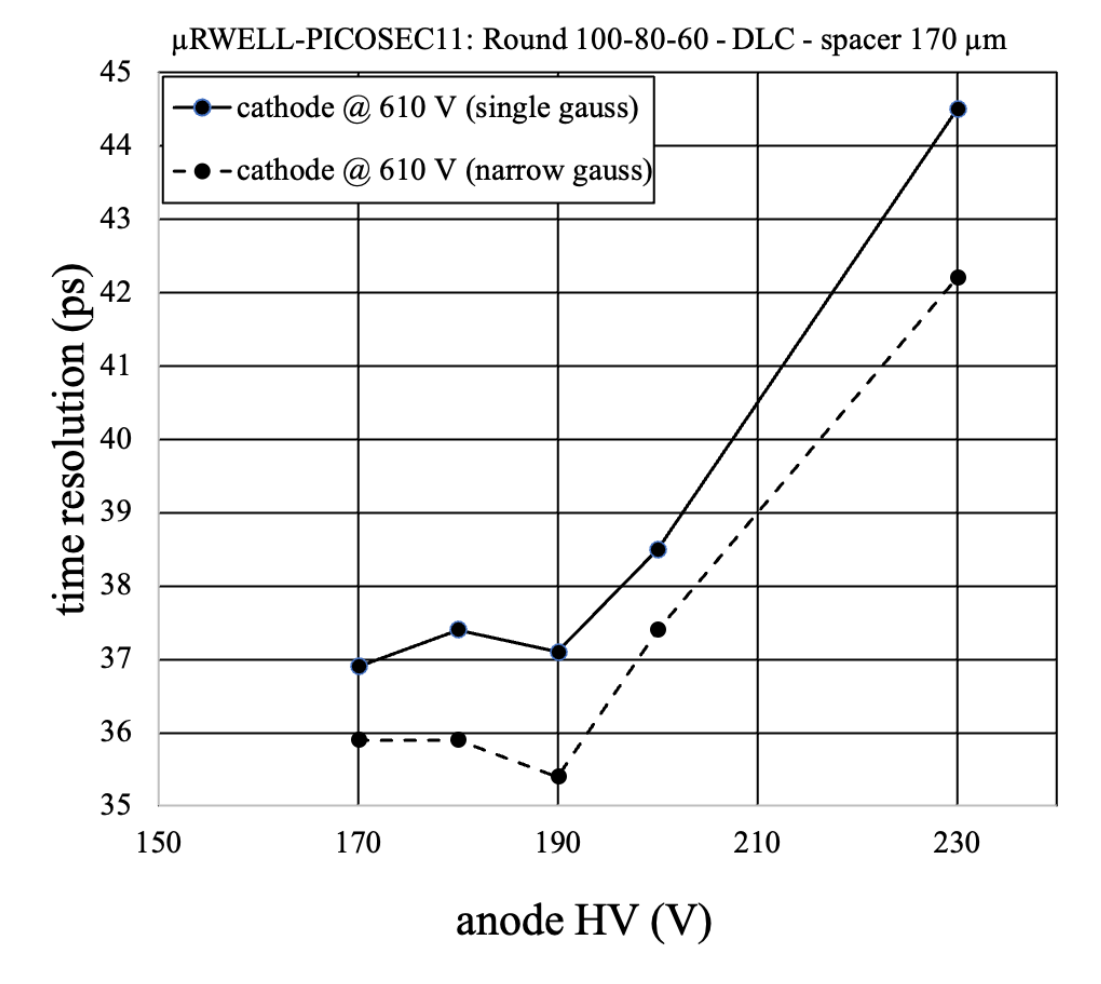
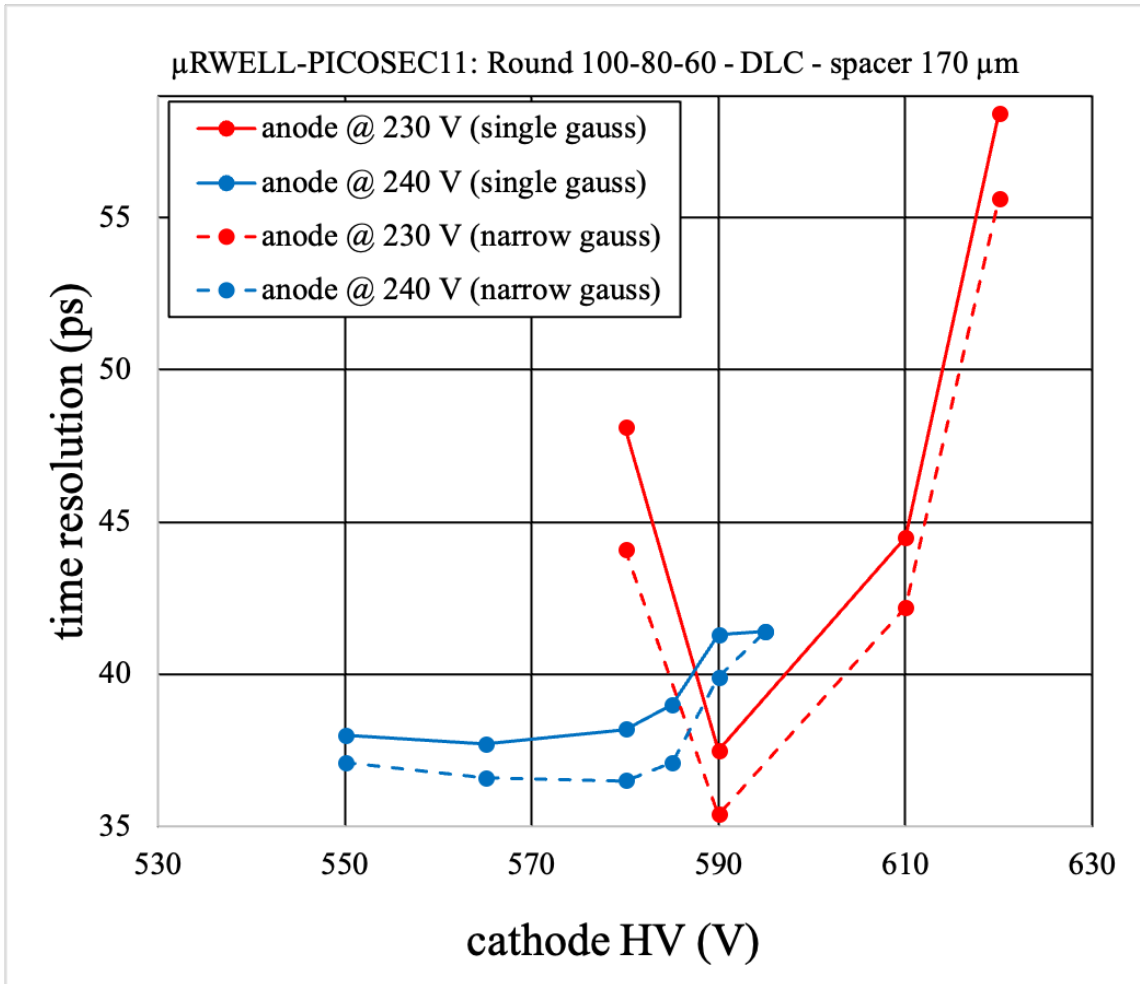
$\mu$ RWELL-PICOSEC11: Round 100-80-60 - CsI - spacer 170  $\mu$ m

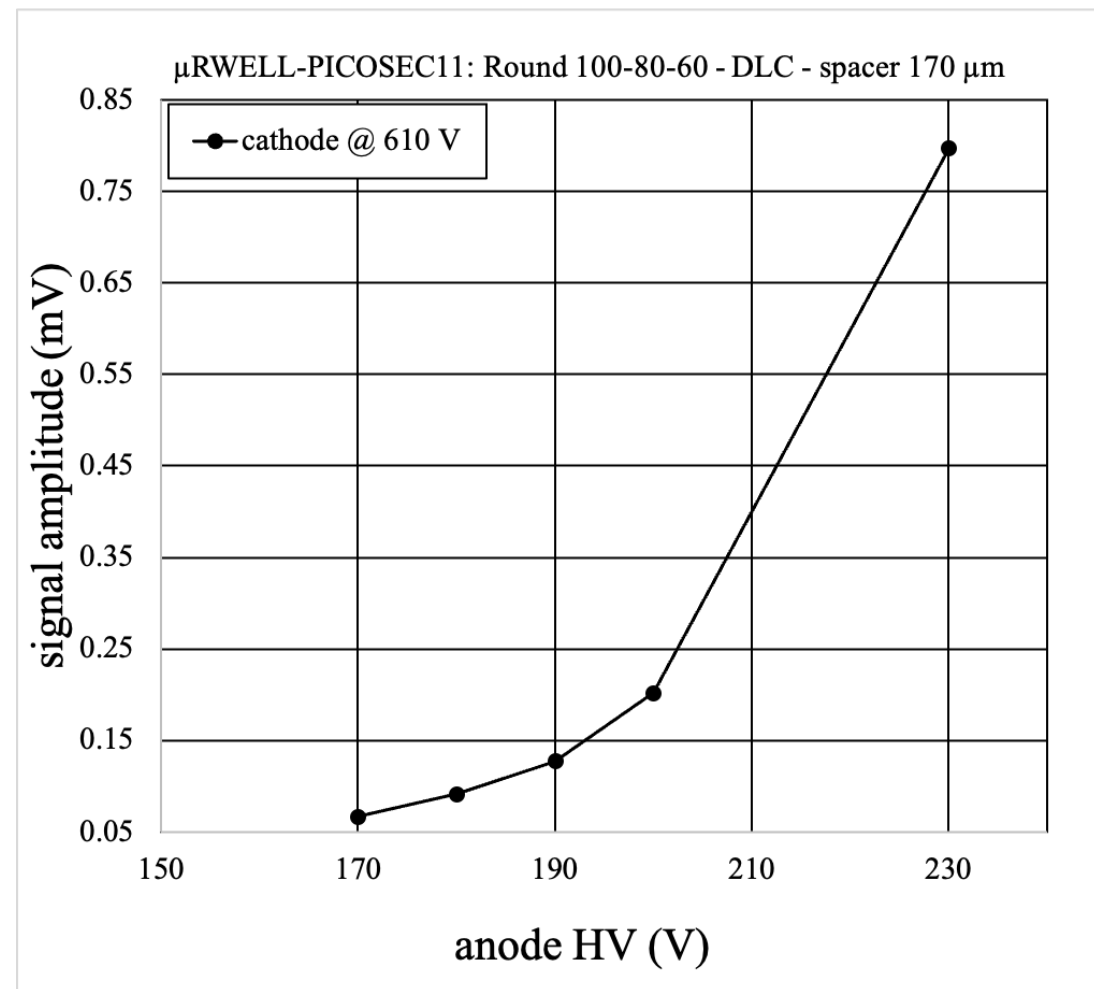
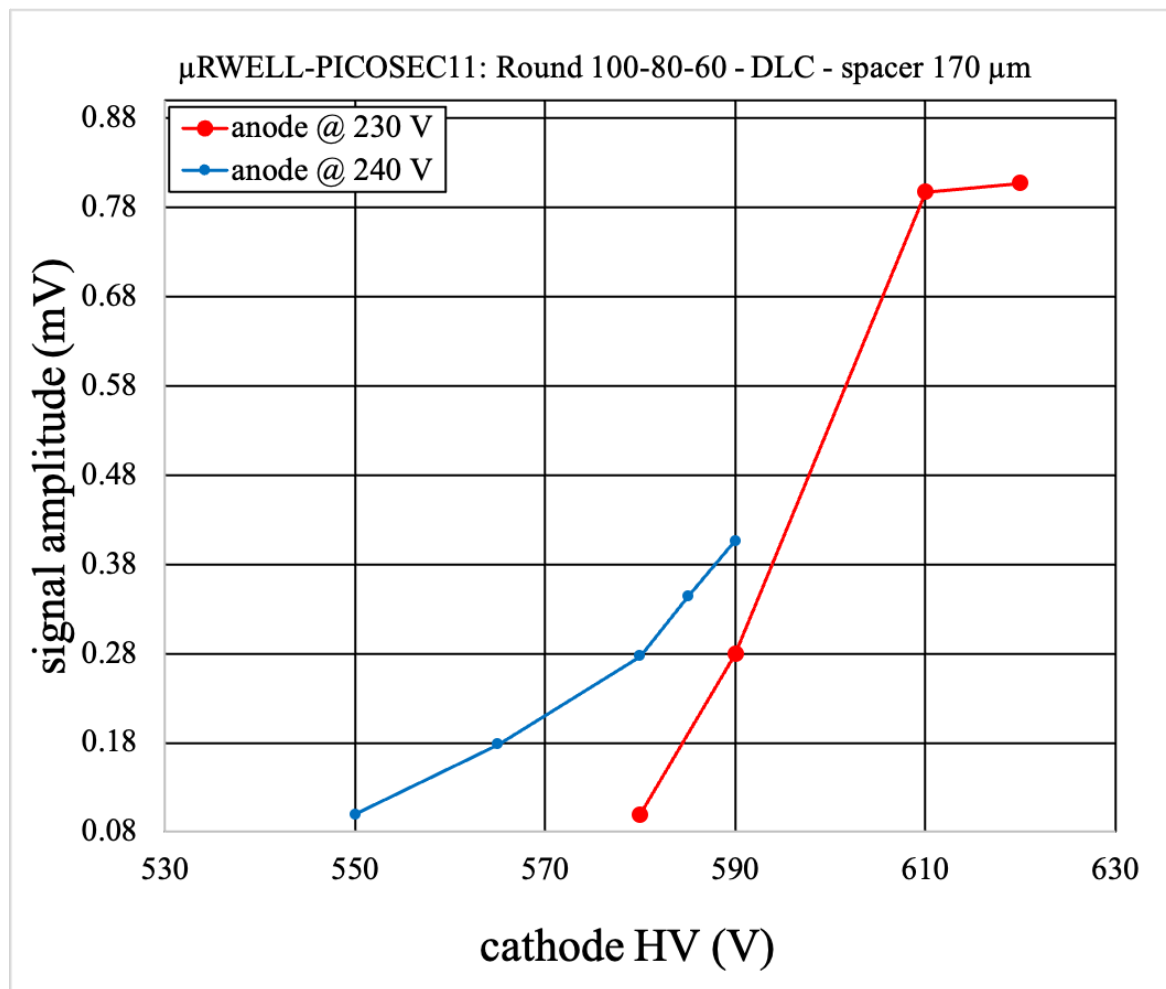


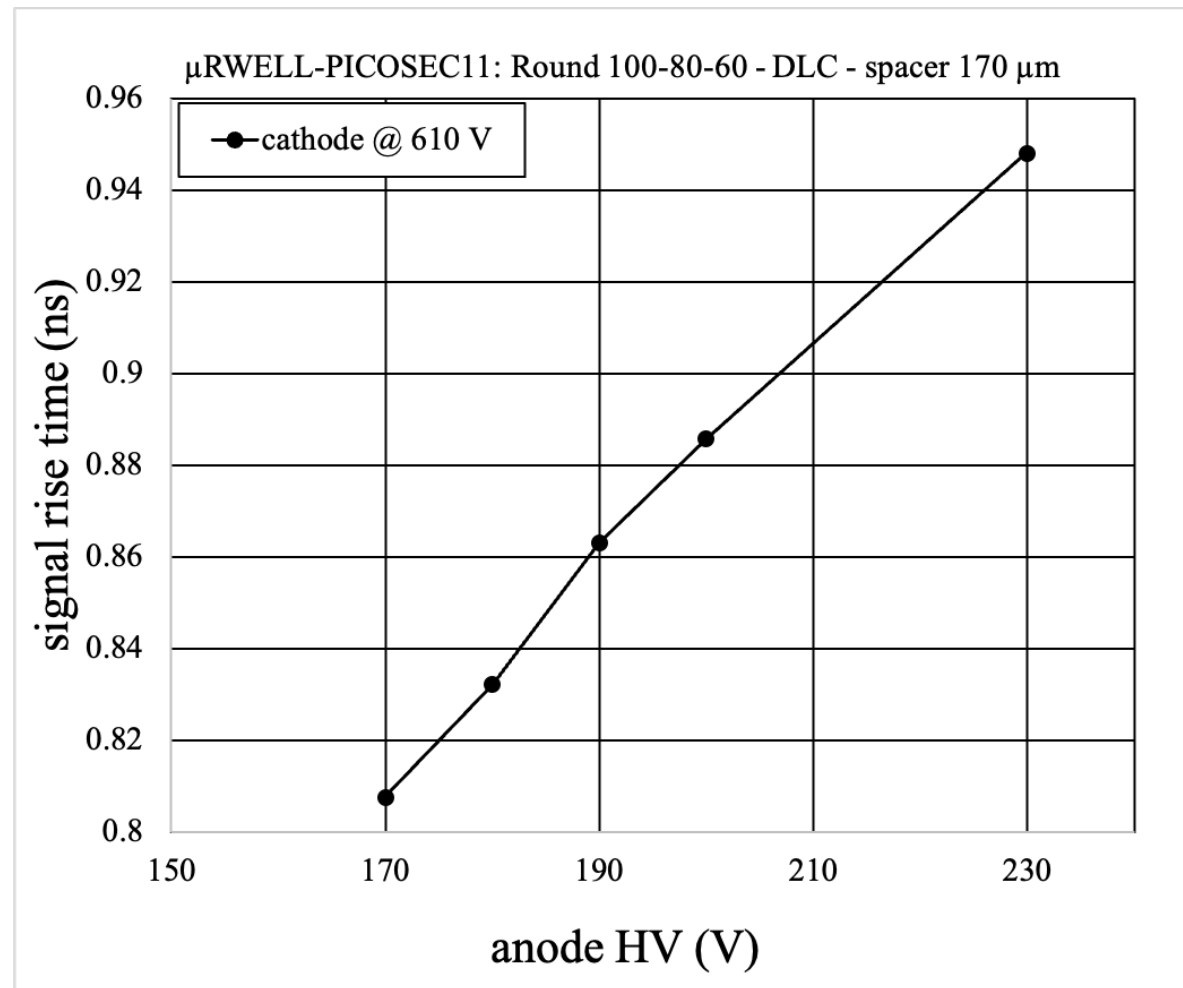
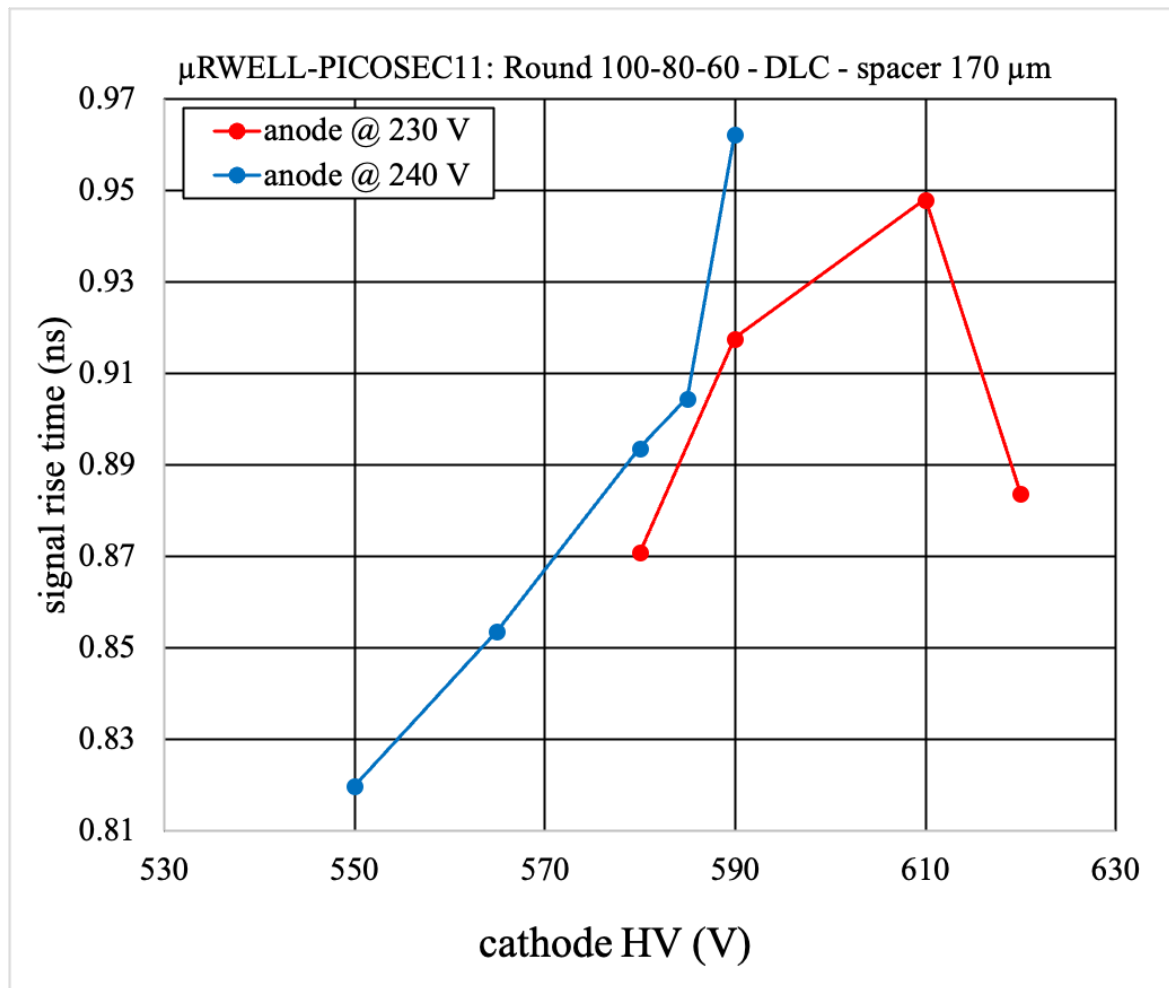


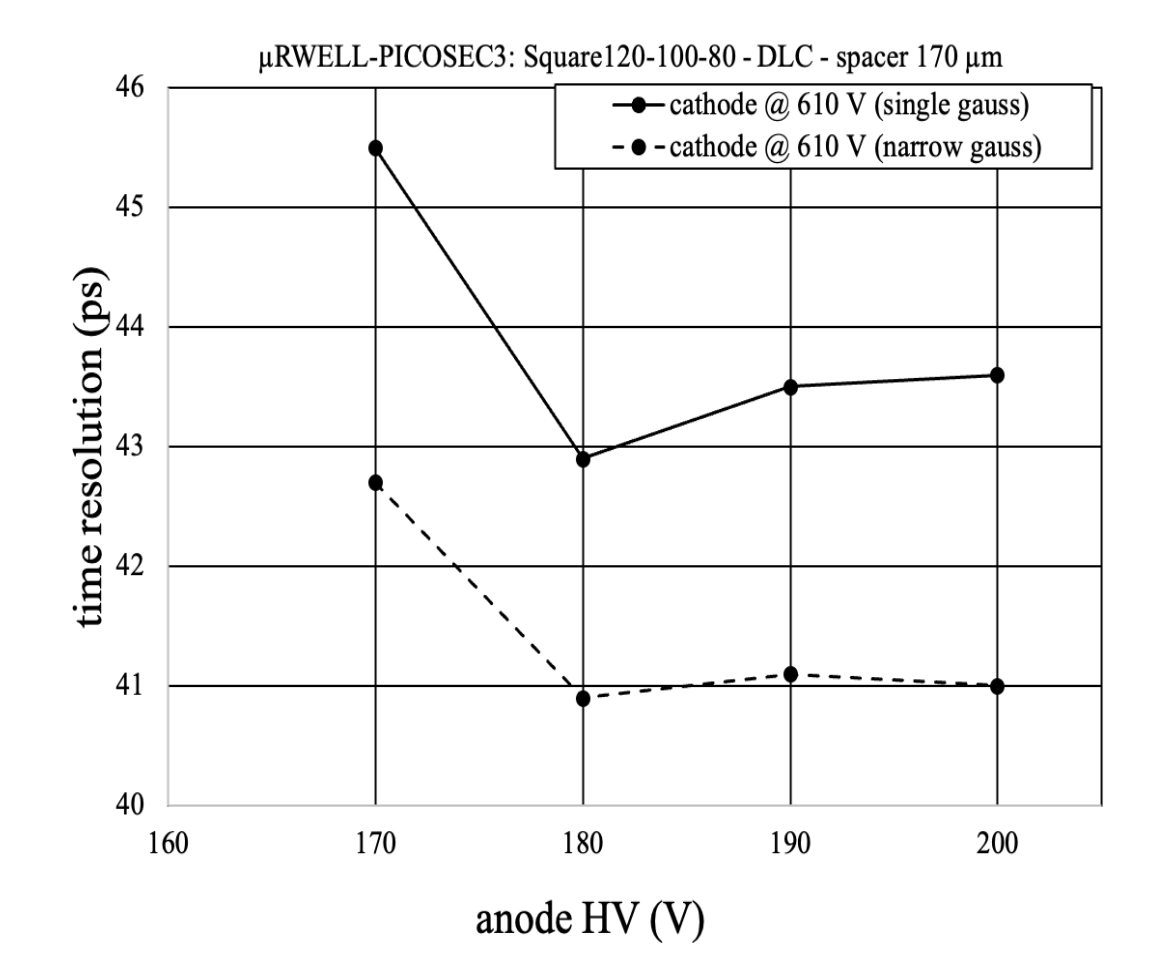
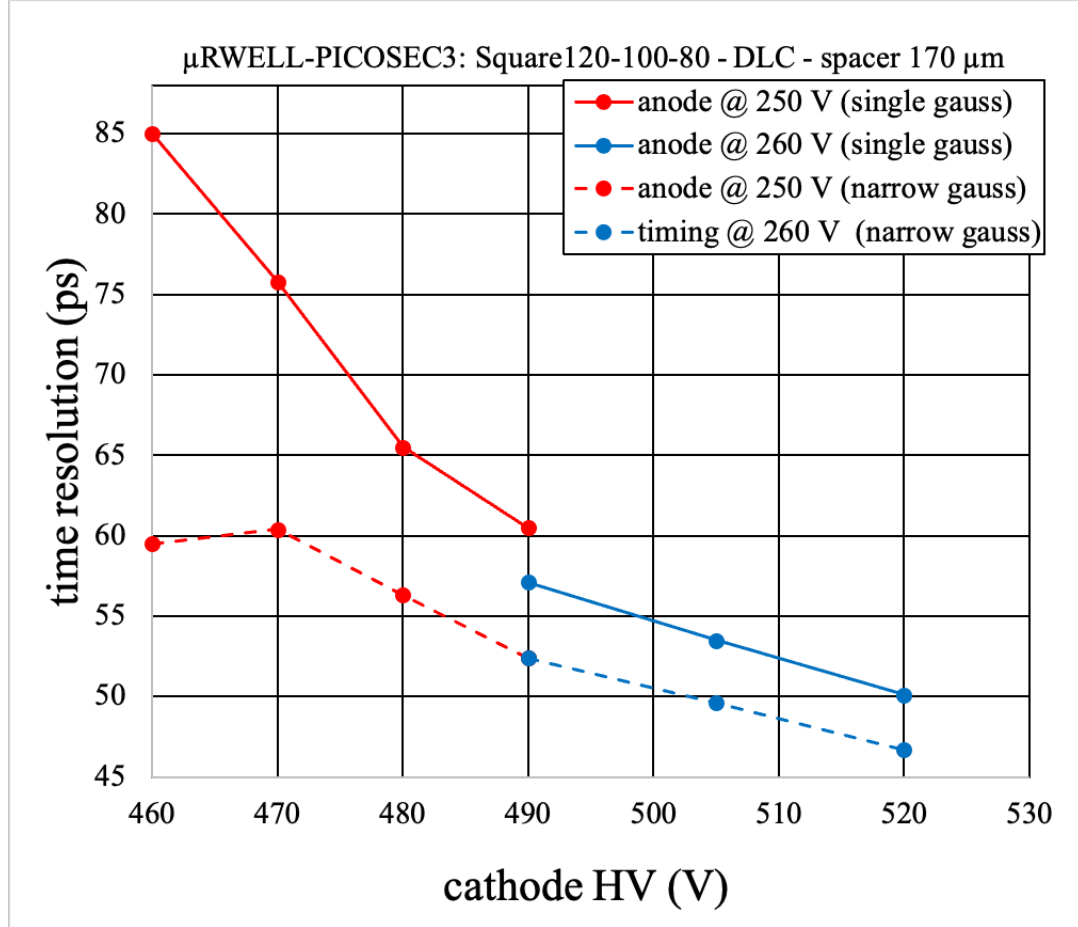
# **Results of uRWELL single channel prototypes with DLC photocathode**

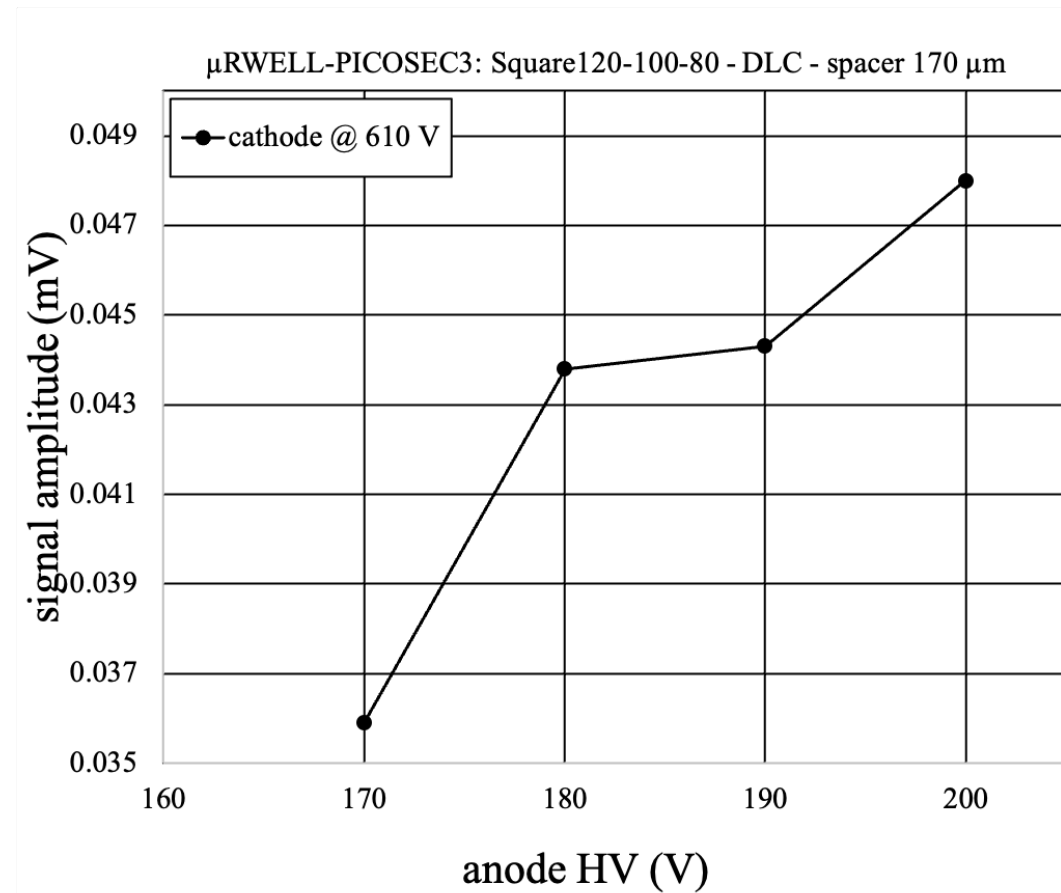
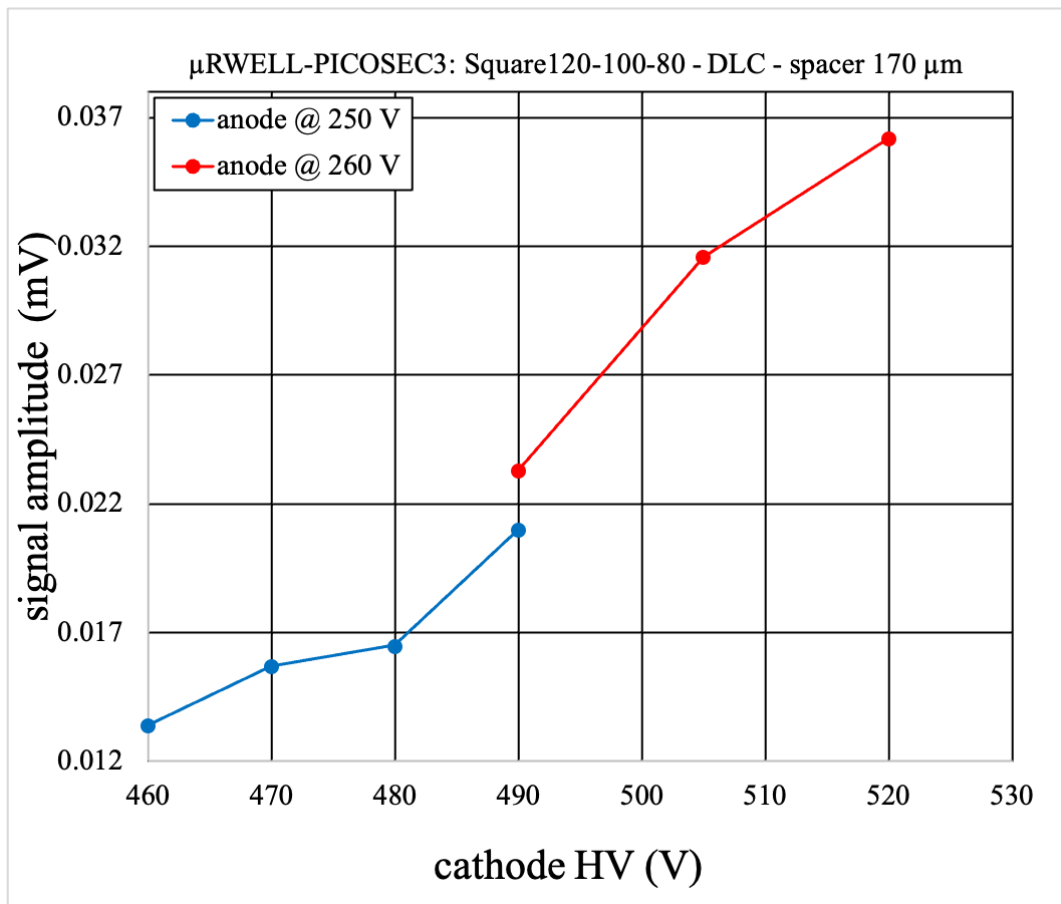


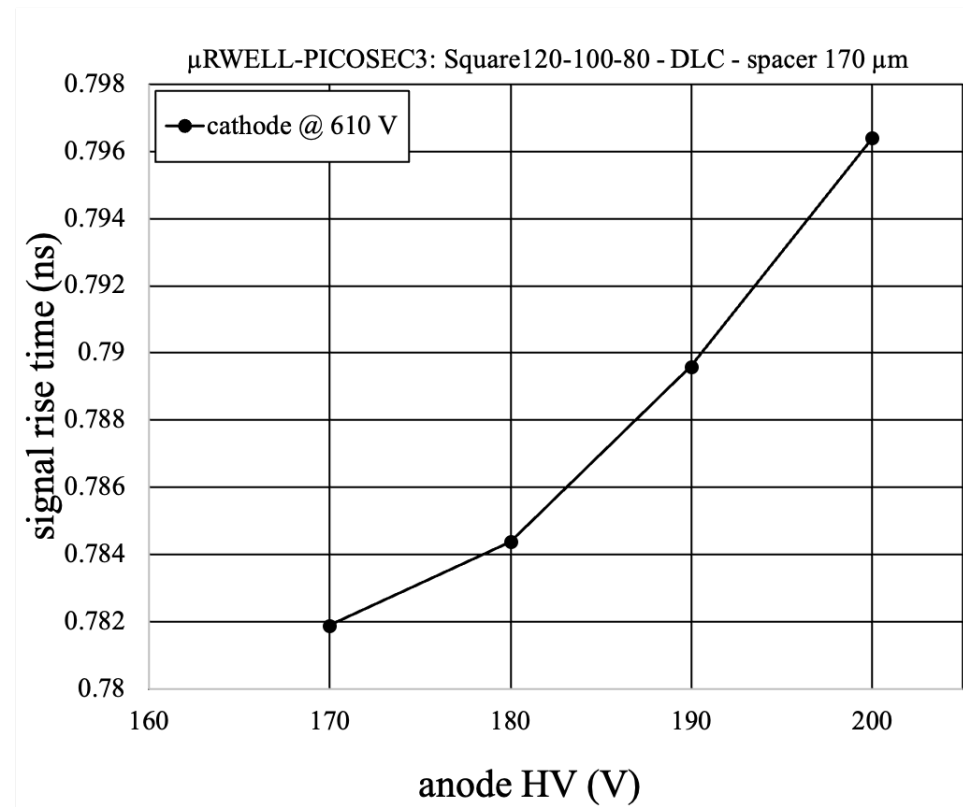
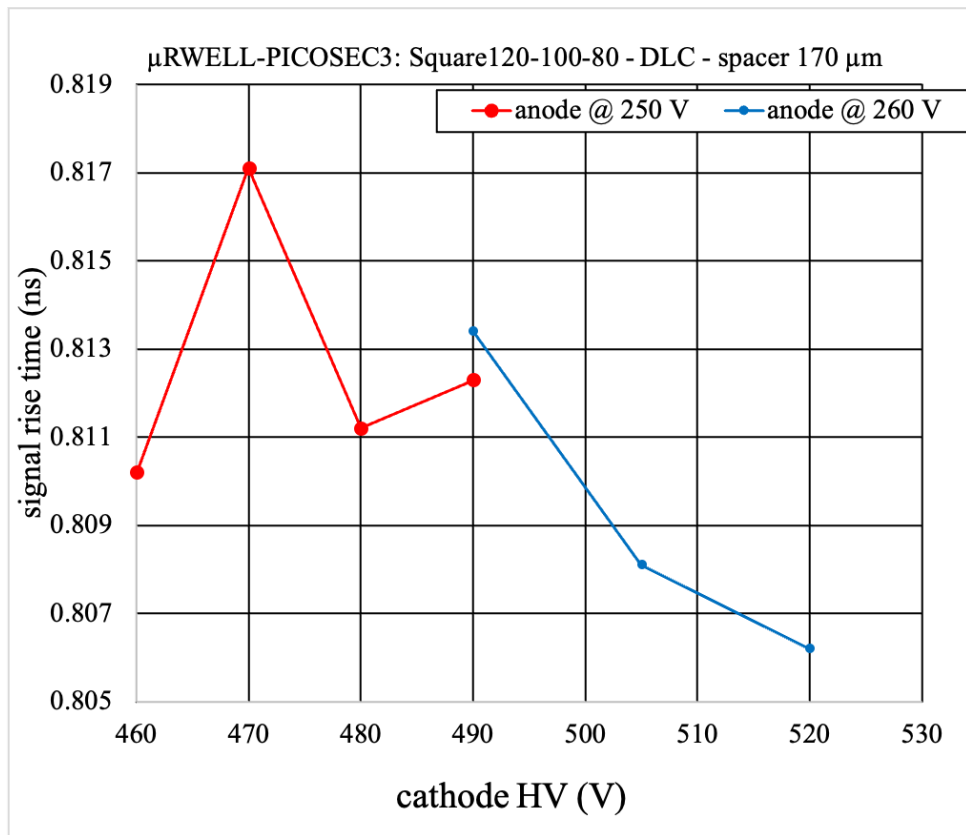


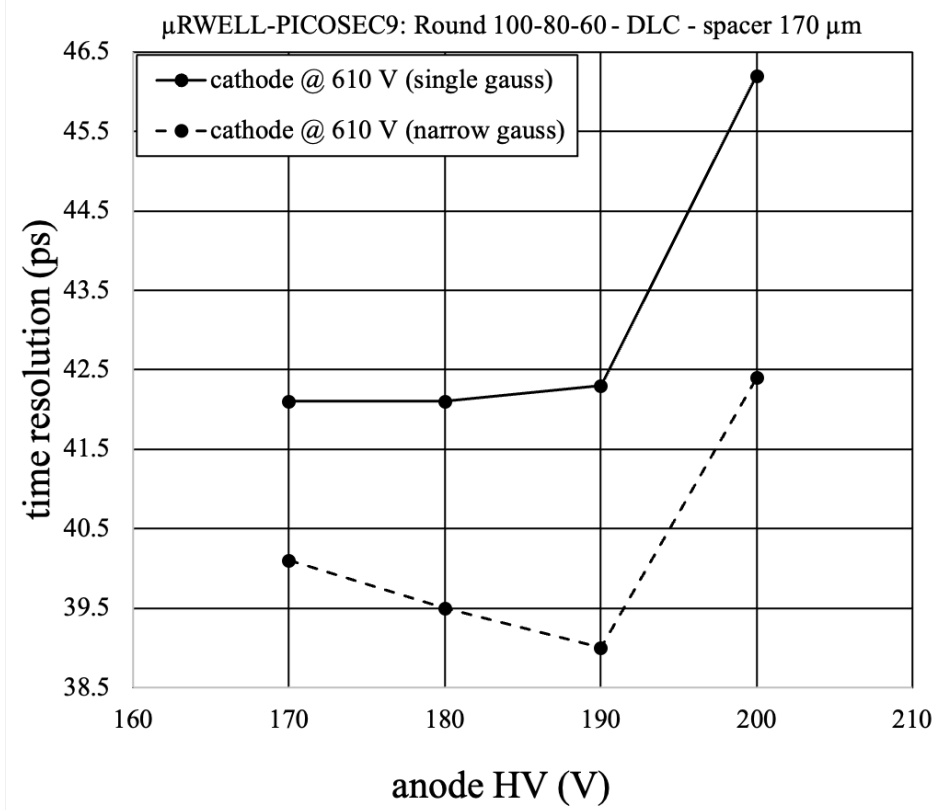
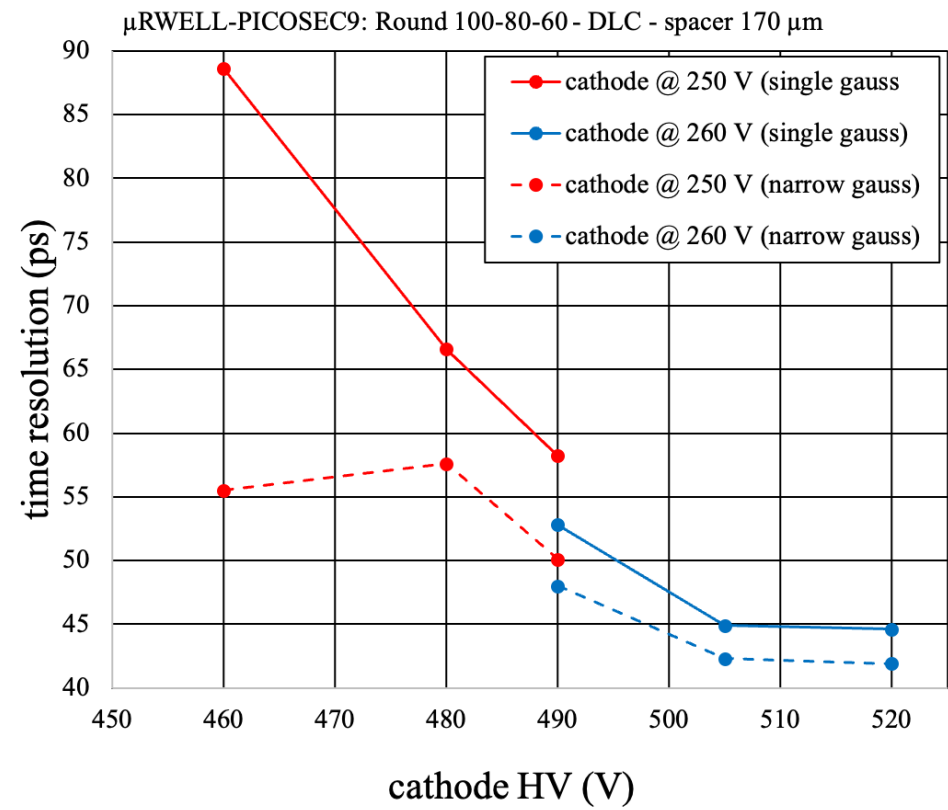


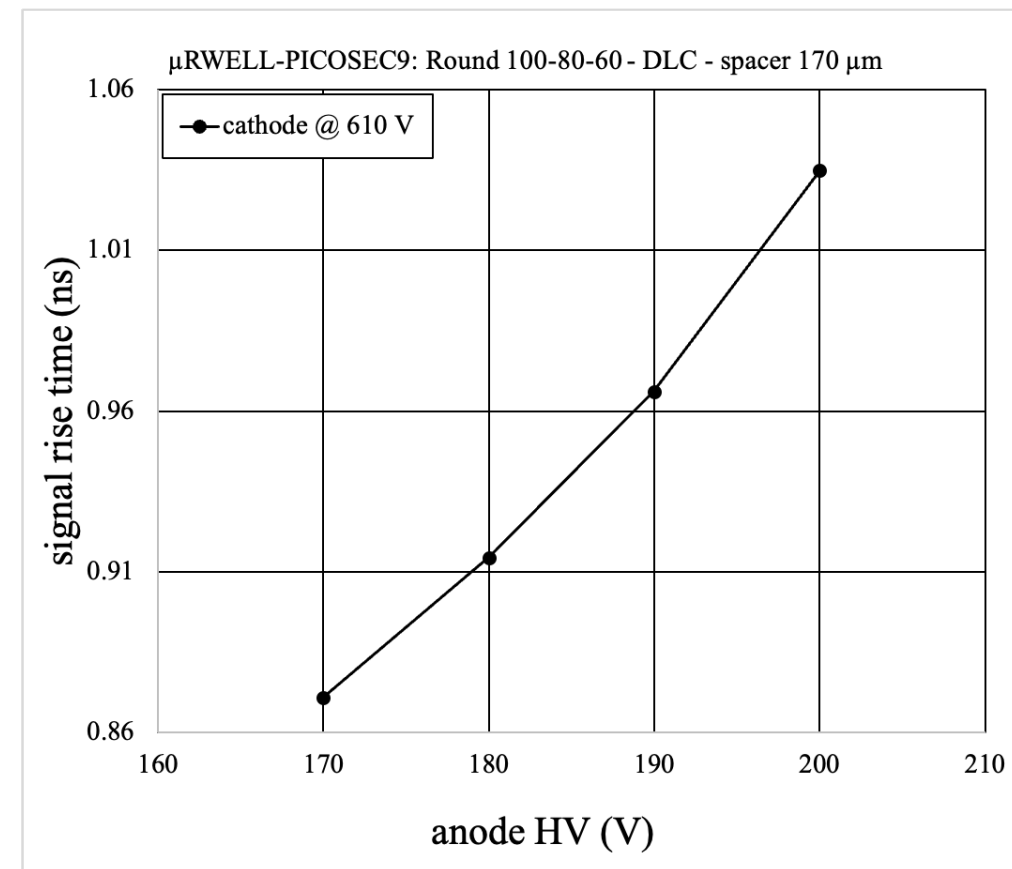
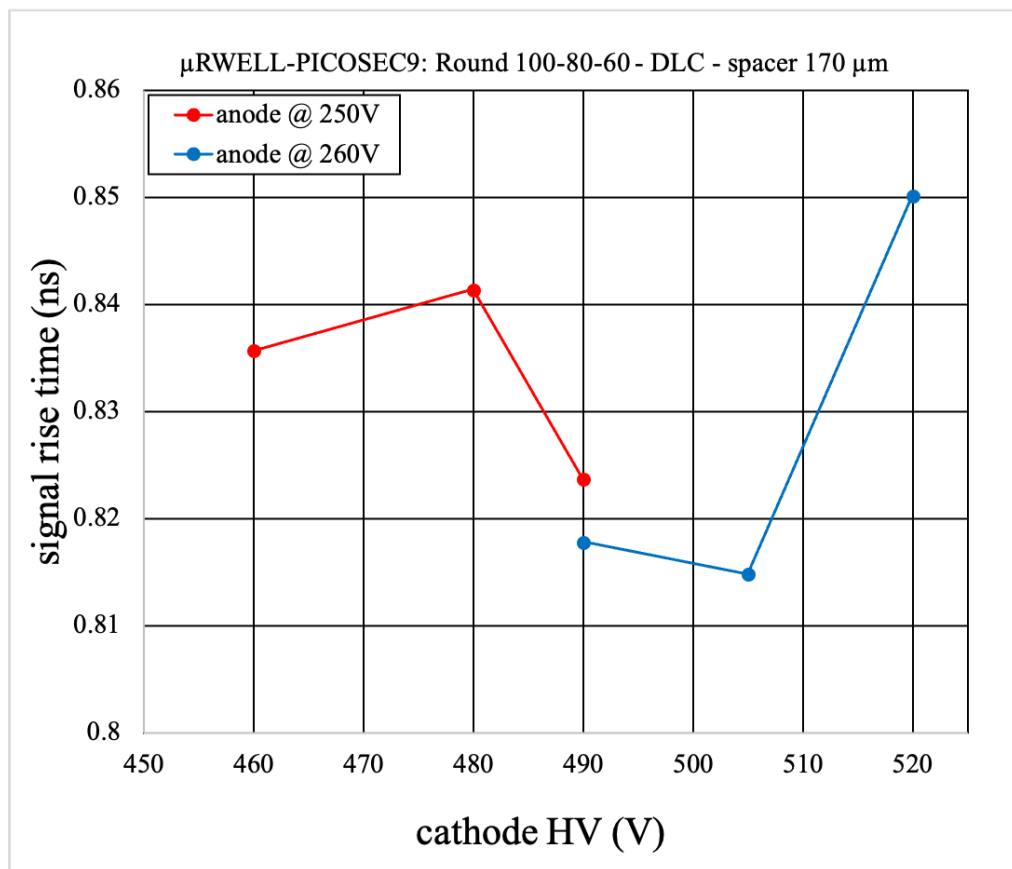




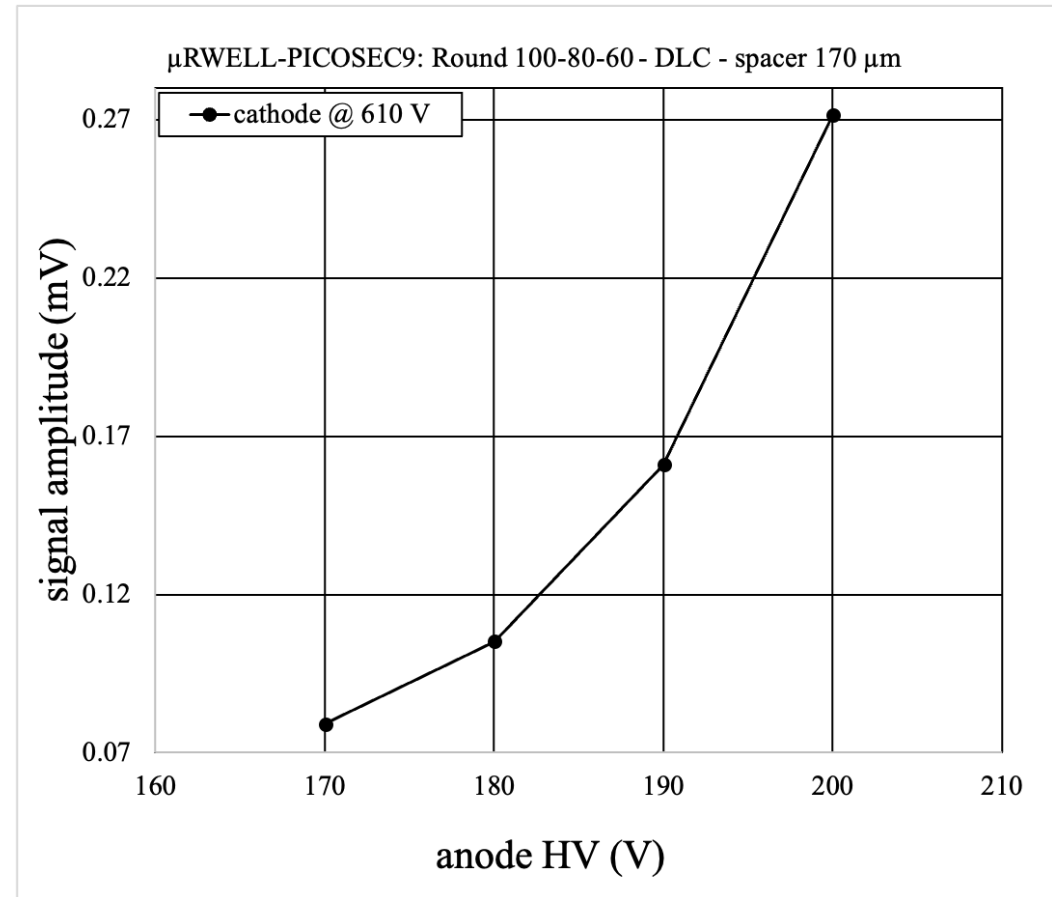
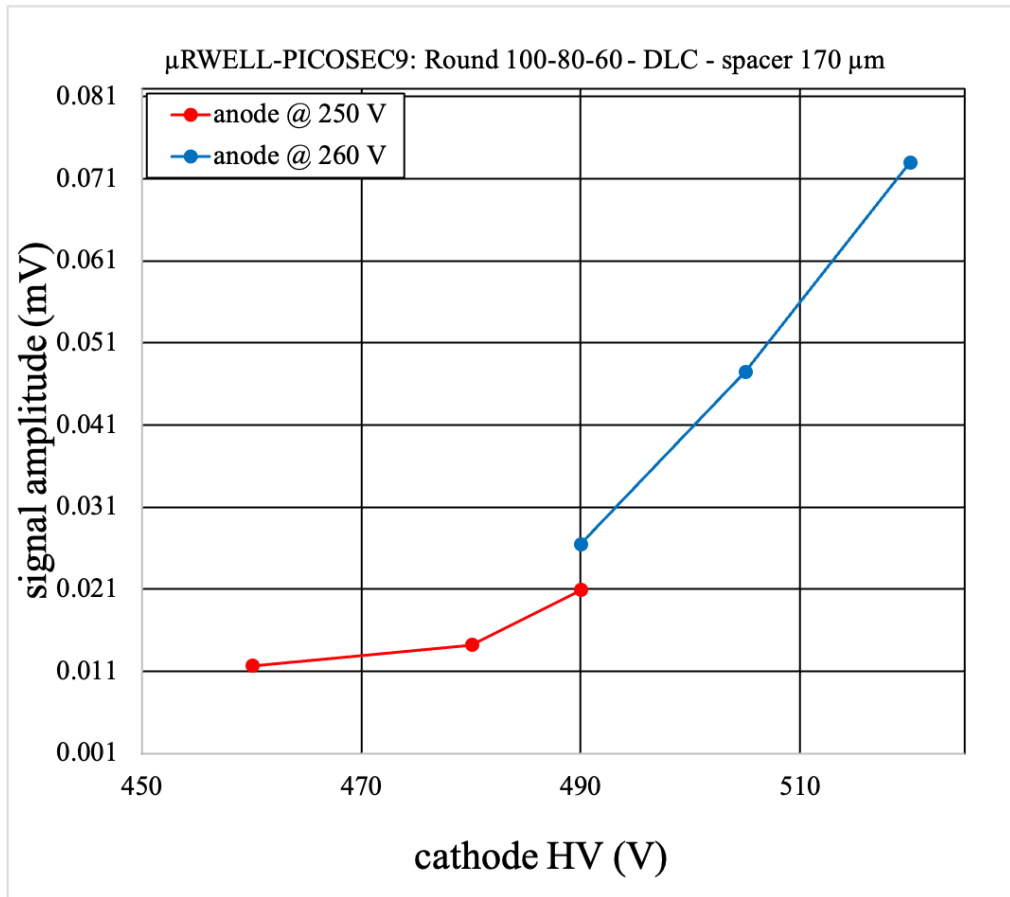


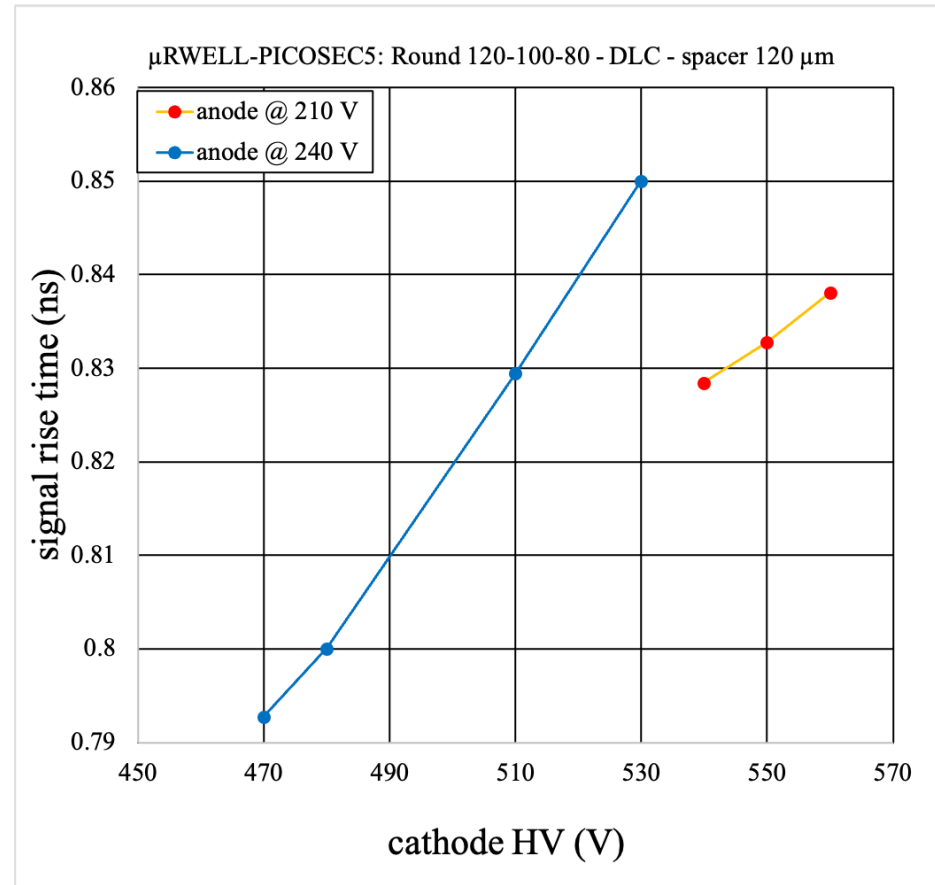
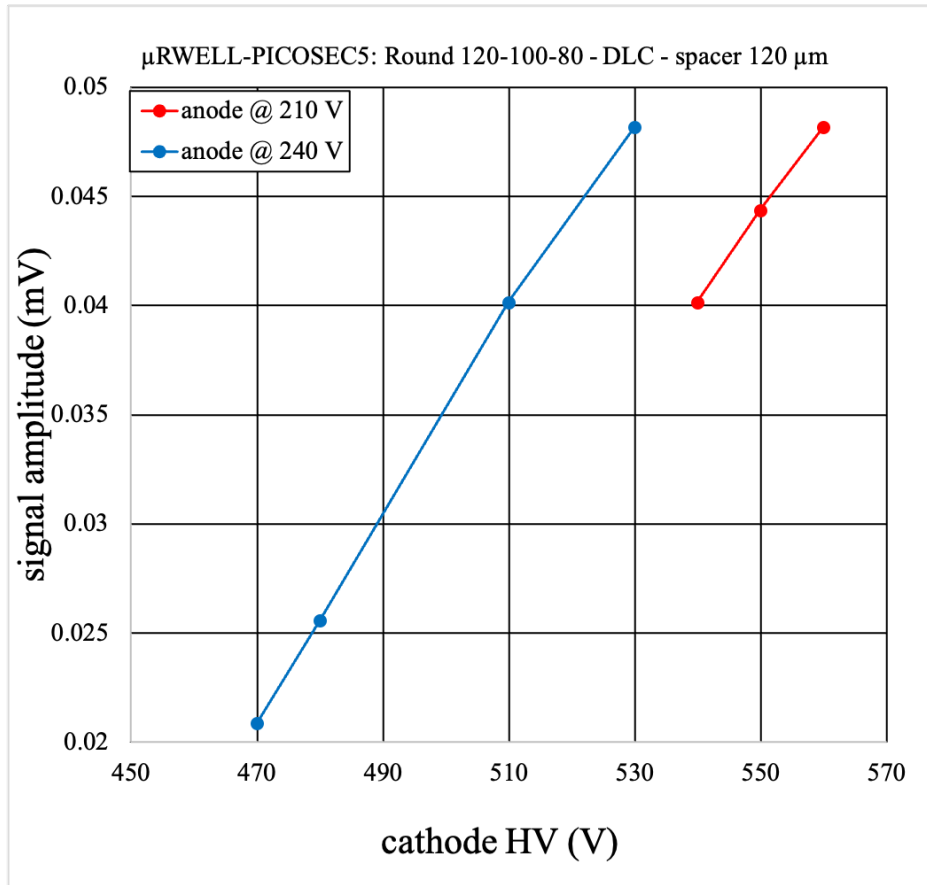


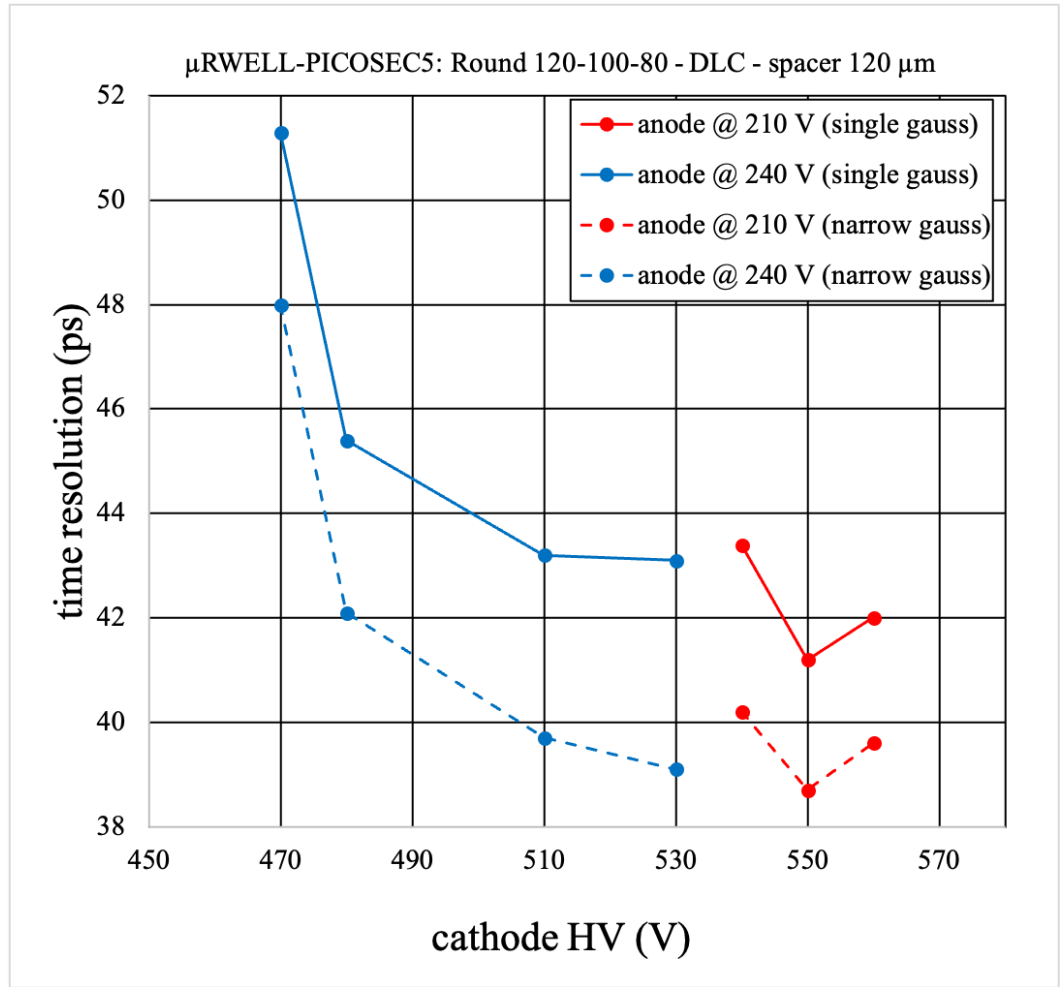


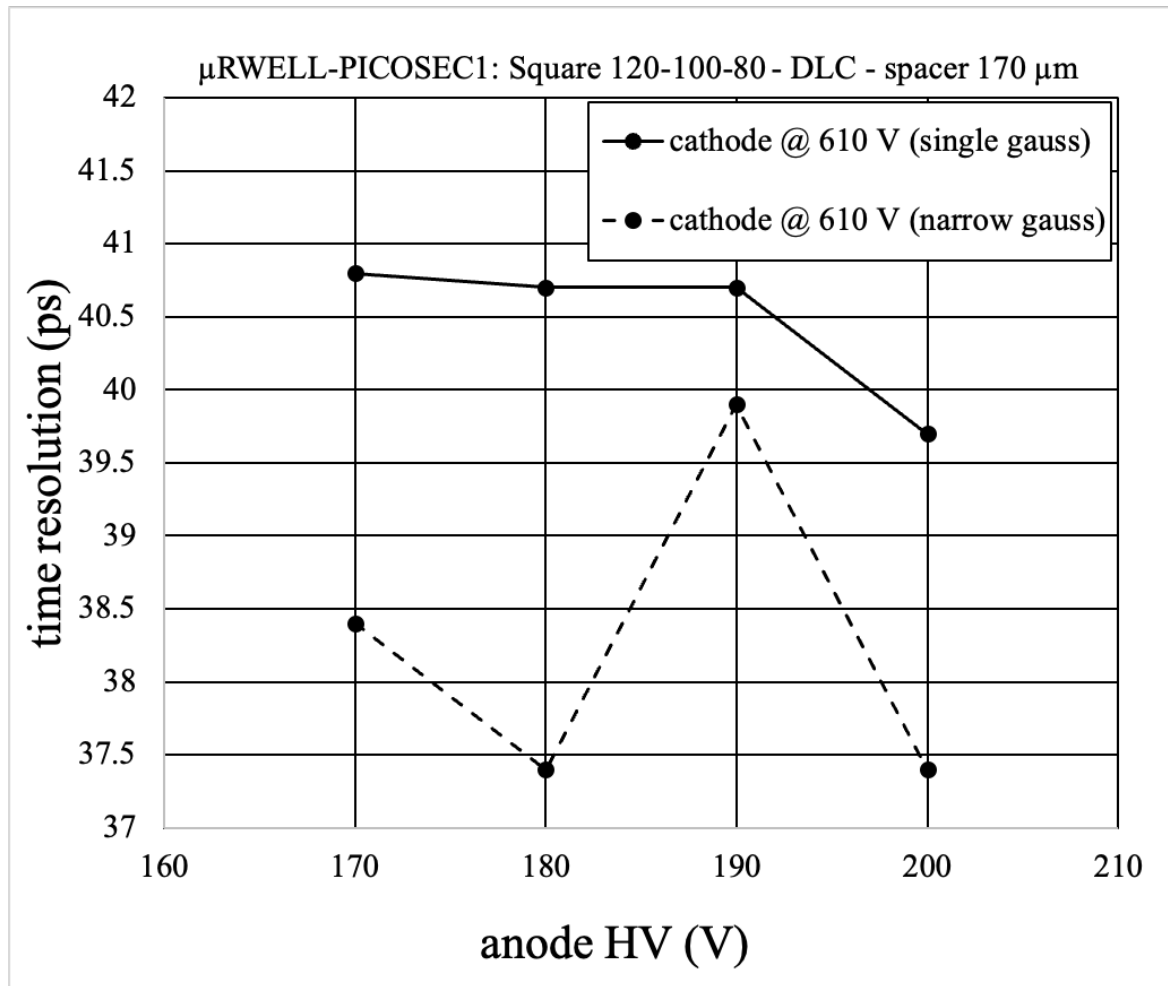


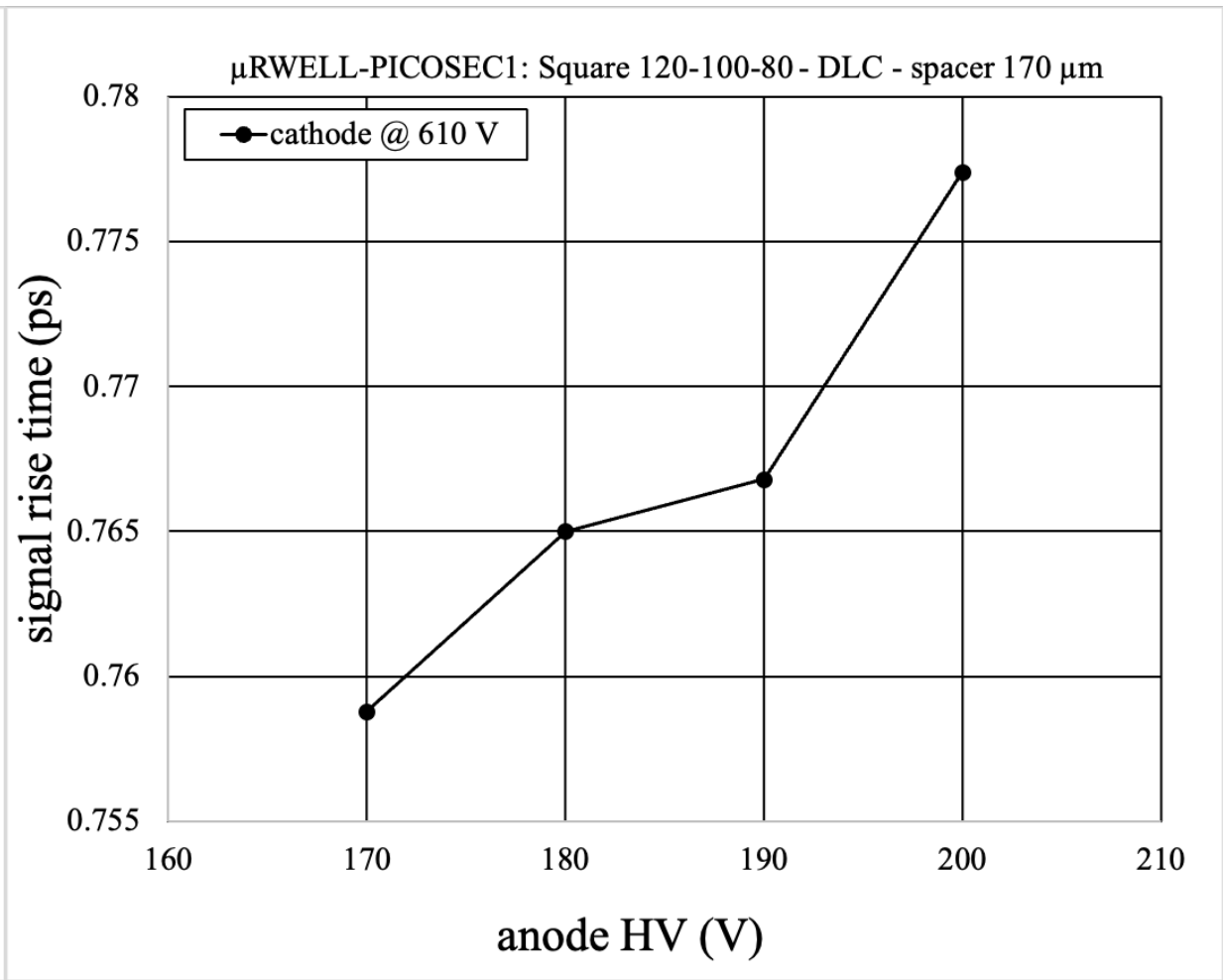
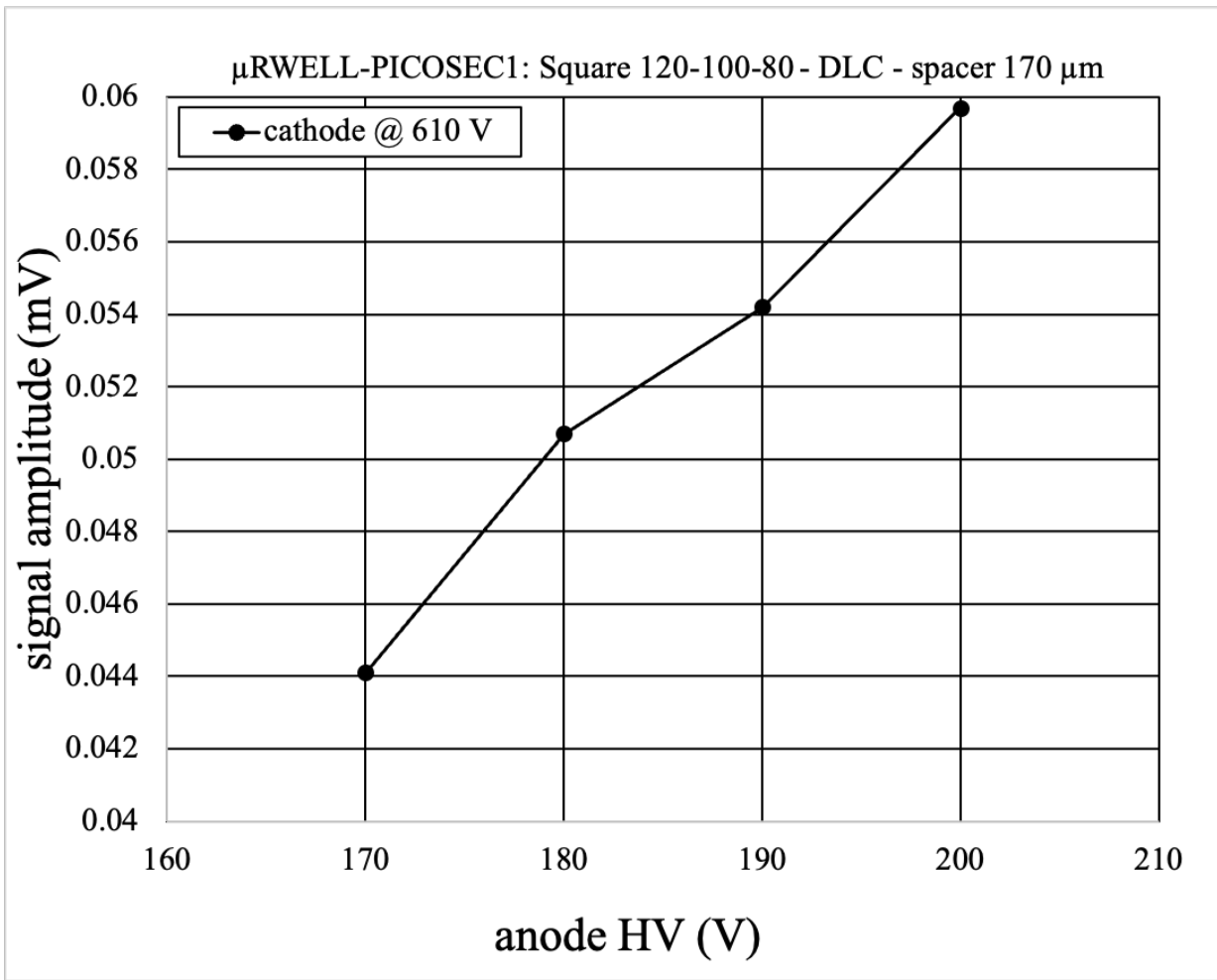


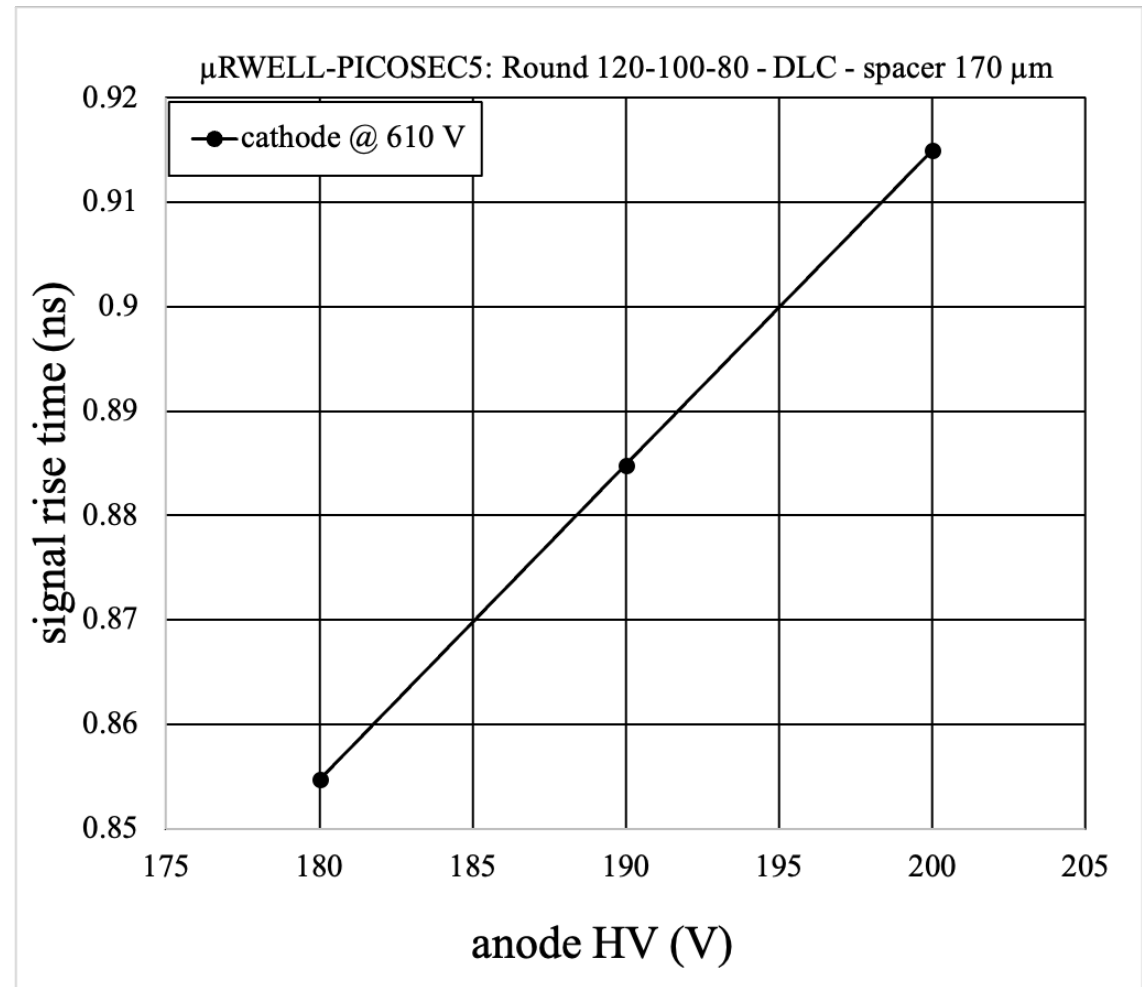
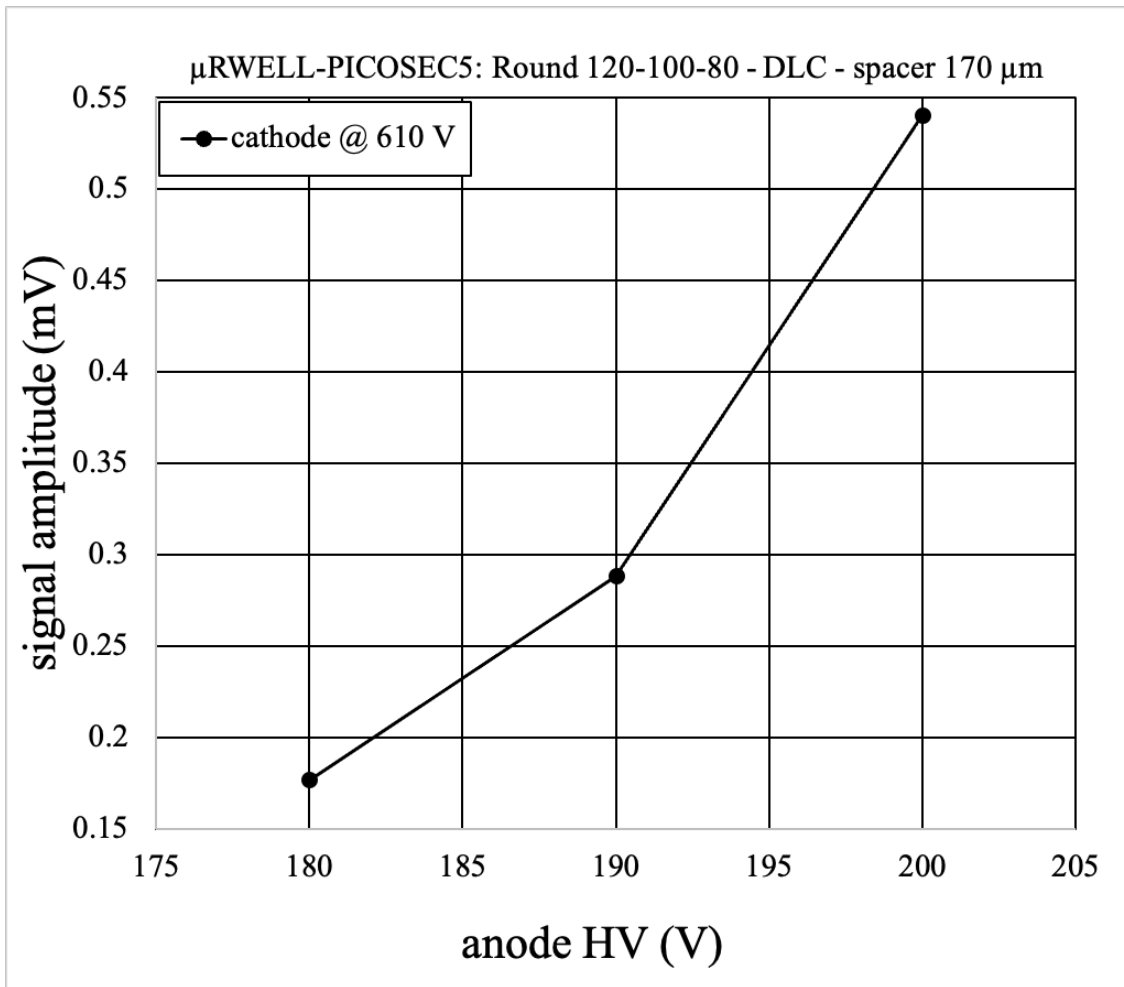


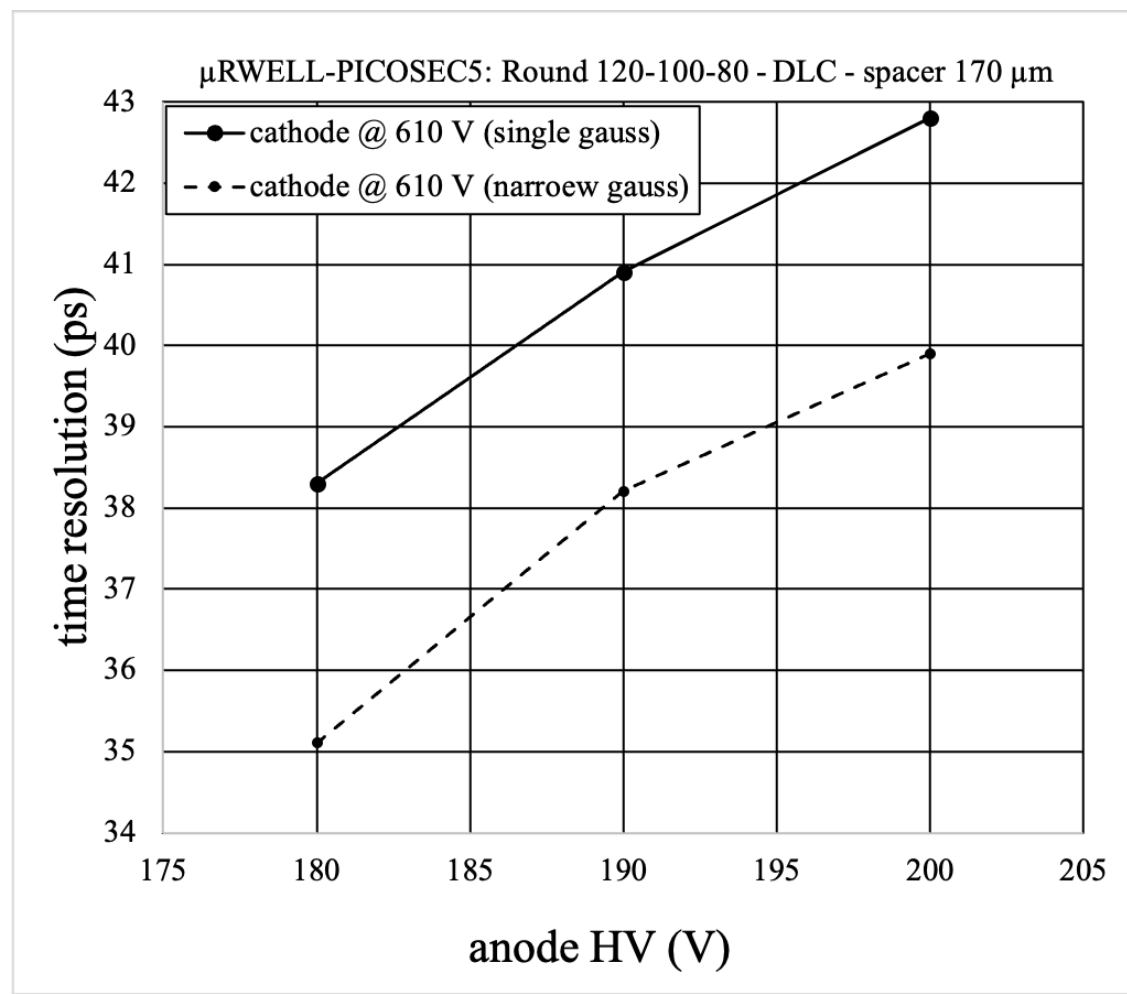


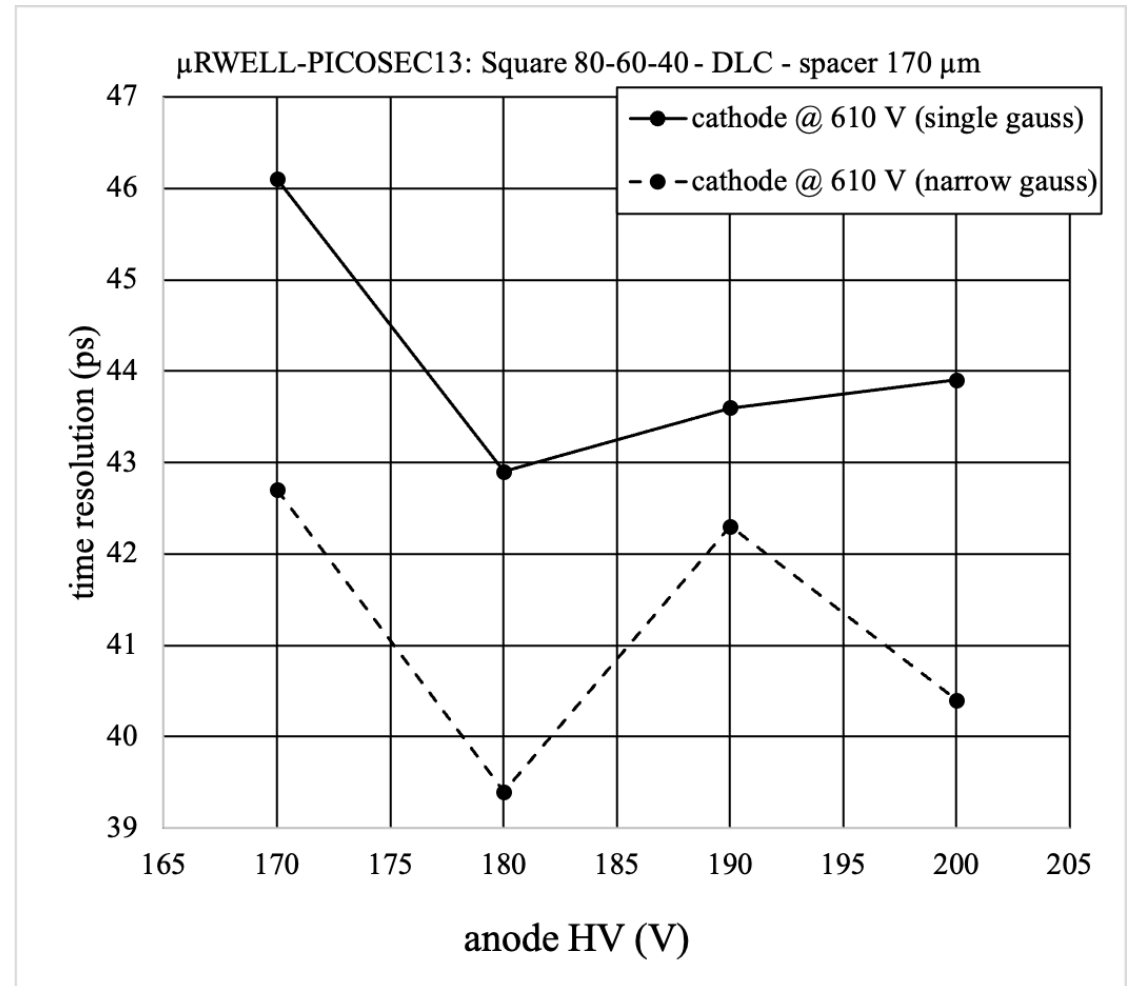
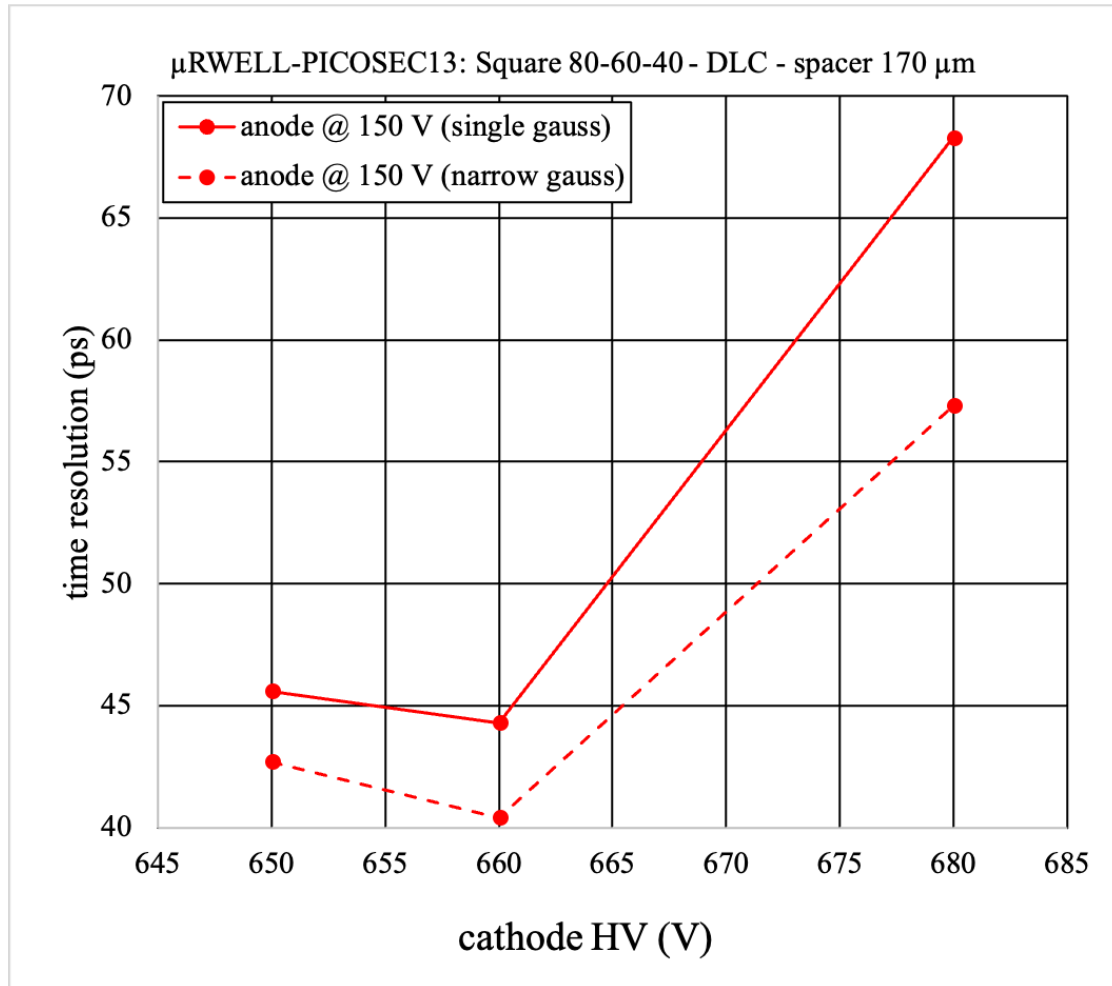




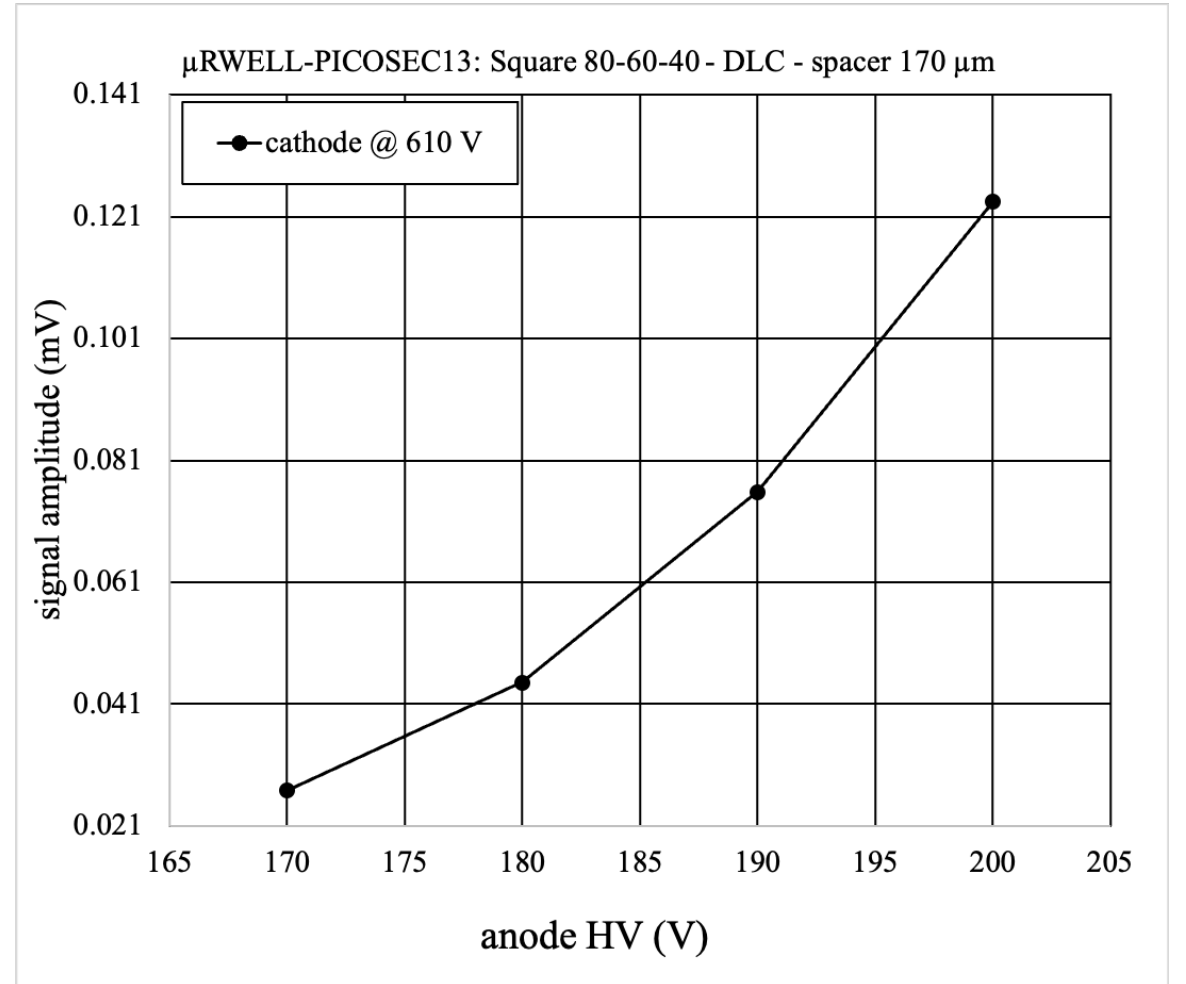
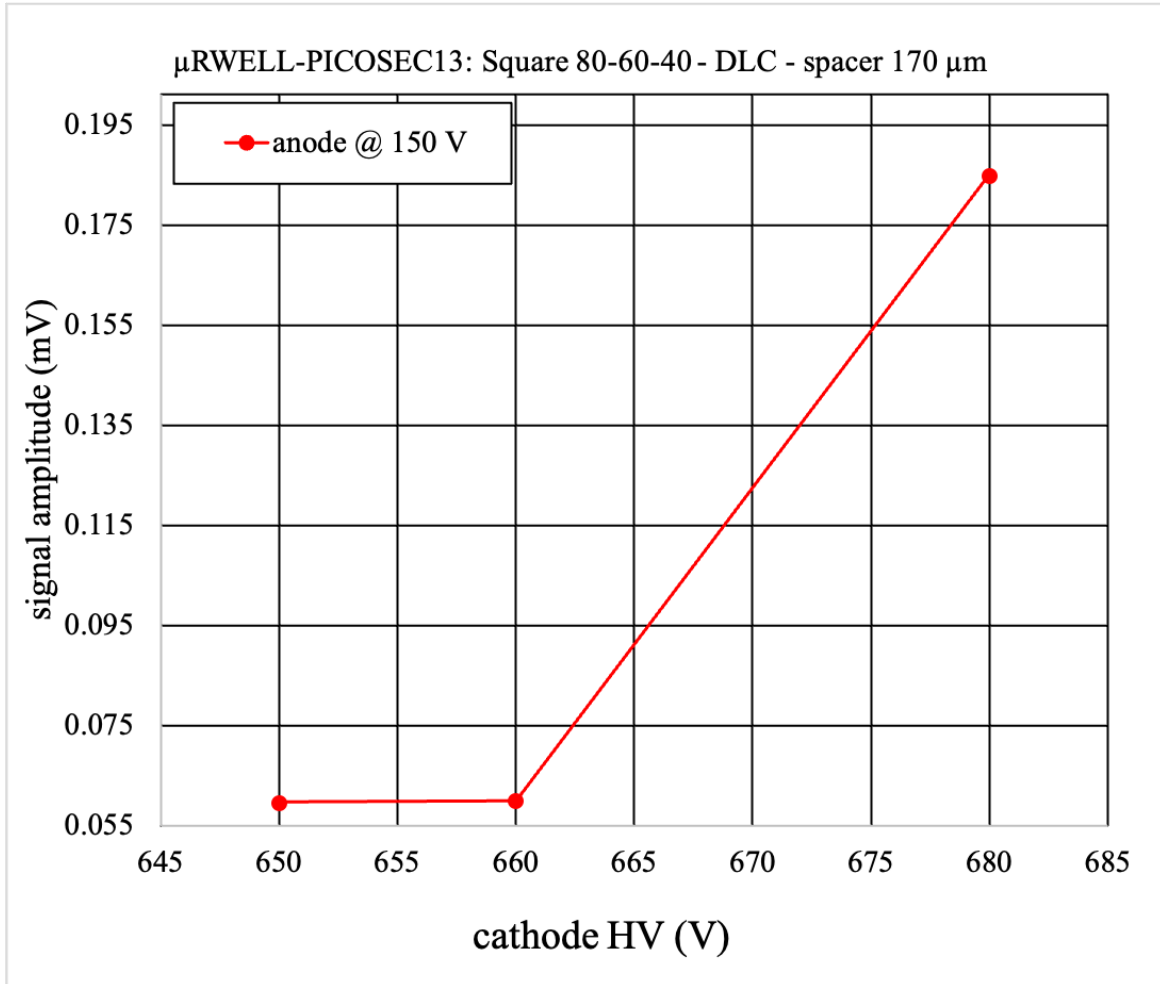




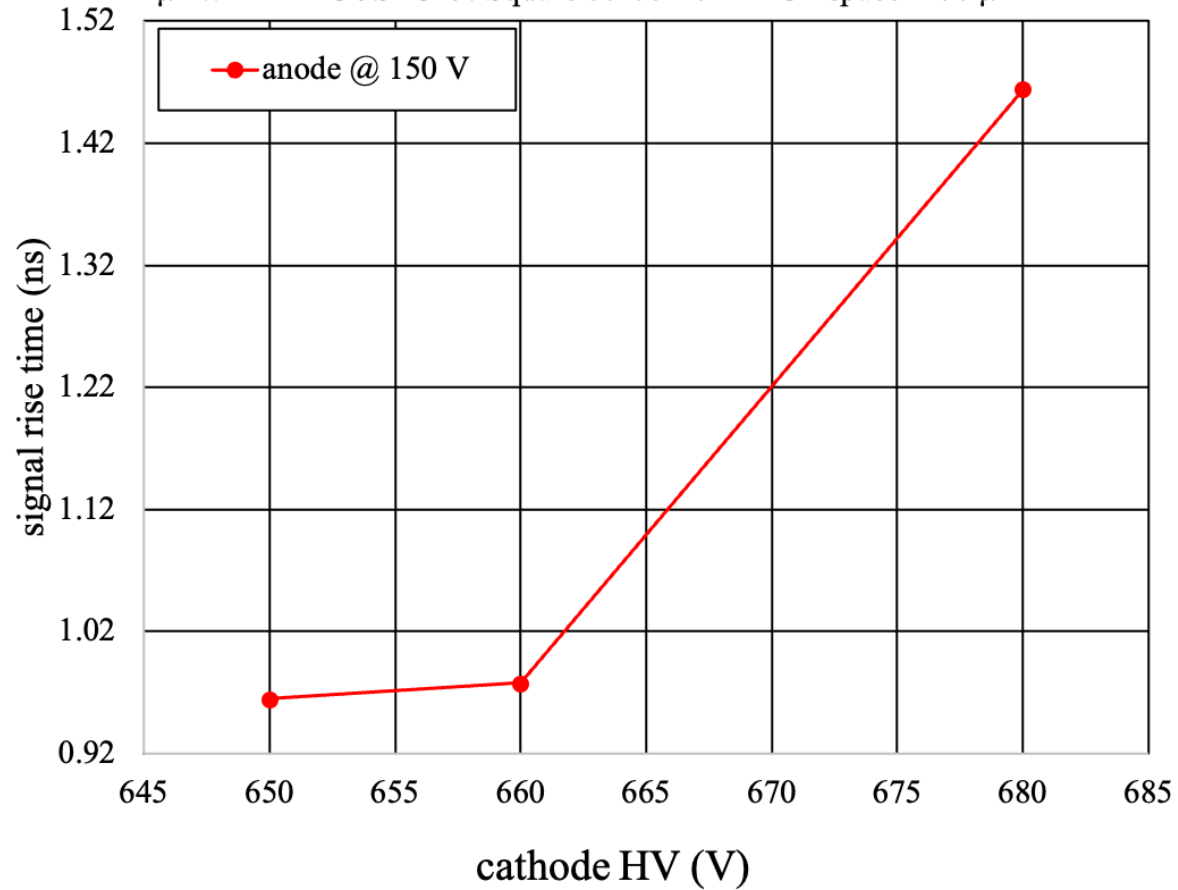




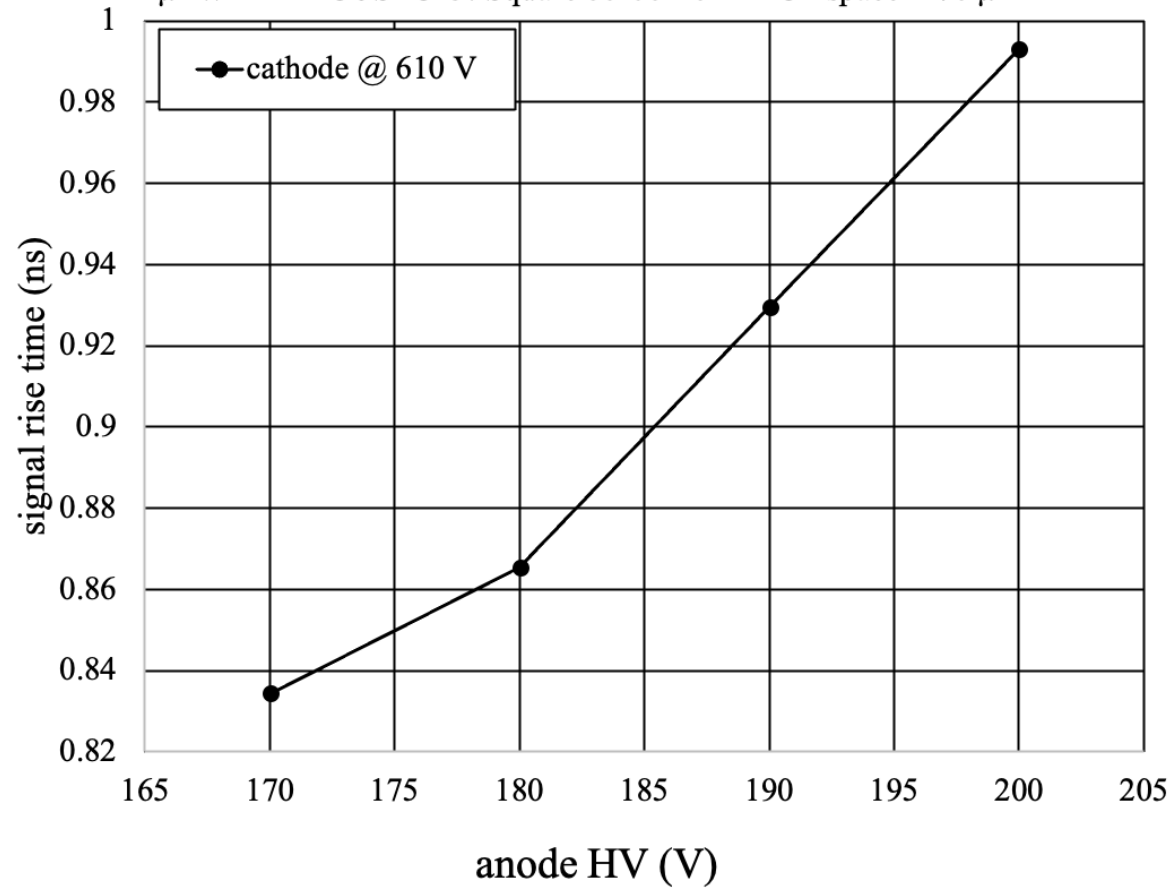




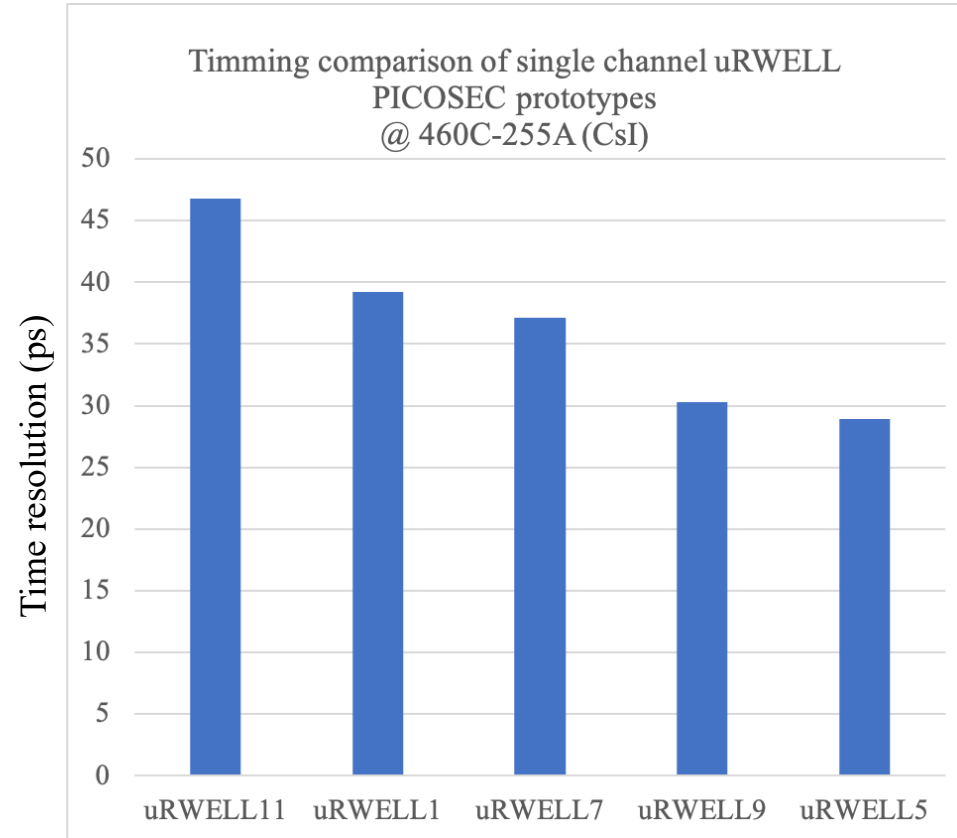
$\mu$ RWELL-PICOSEC13: Square 80-60-40 - DLC - spacer 170  $\mu$ m



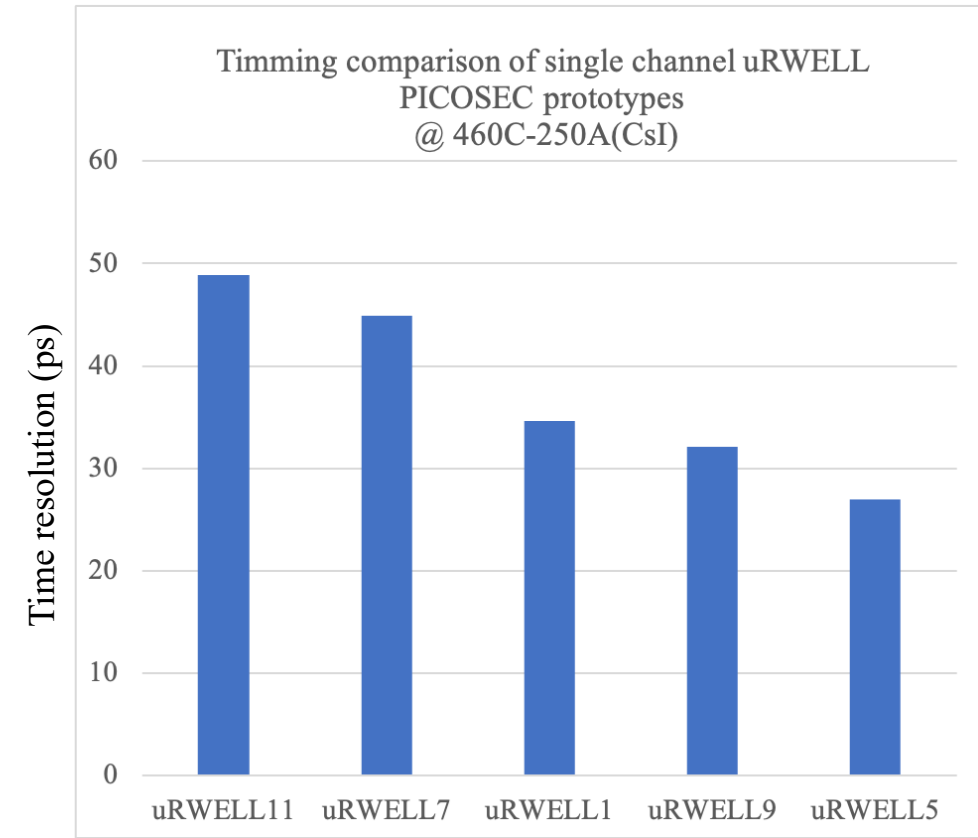
$\mu$ RWELL-PICOSEC13: Square 80-60-40 - DLC - spacer 170  $\mu$ m



## Time resolution at same Cathode-Anode voltage settings

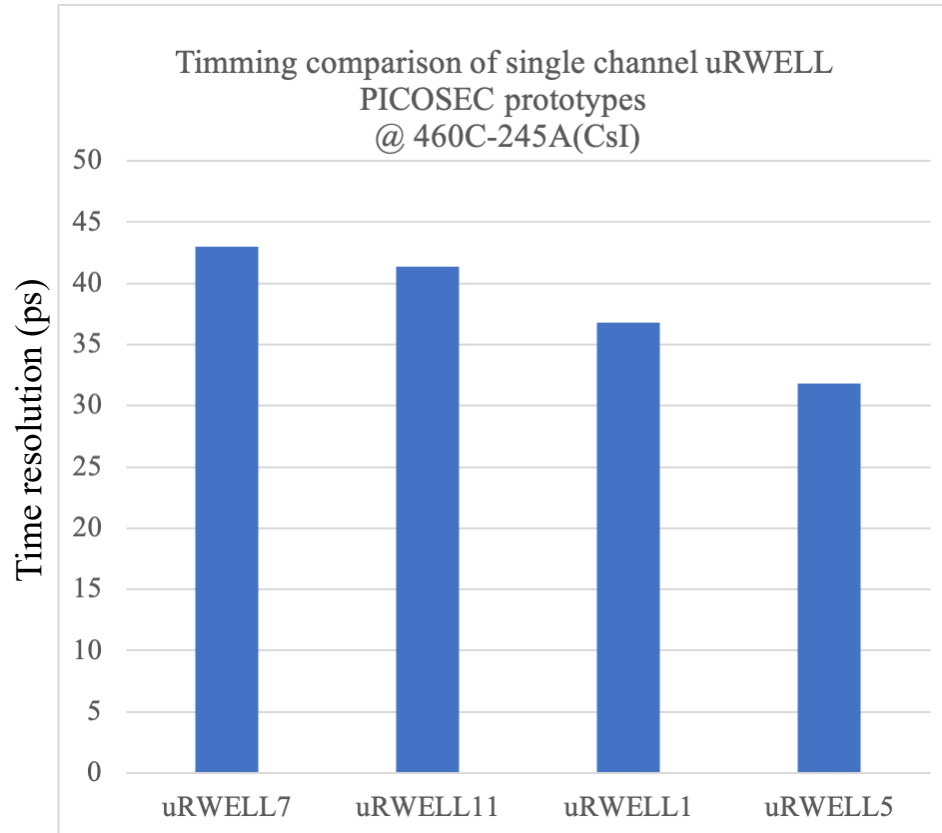


<b>Pitch</b> ( $\mu\text{m}$ )	100	120	120	100	120
<b>Hole(o)</b> ( $\mu\text{m}$ )	80	100	100	80	100
<b>Hole(i)</b> ( $\mu\text{m}$ )	60	80	80	60	80
<b>Hole shape</b>	Round	Square	Round	Round	Round
<b>Readout</b>	Grided	Plain	Grided	Plain	Plain
<b>Spacer</b> ( $\mu\text{m}$ )	170	170	170	170	170

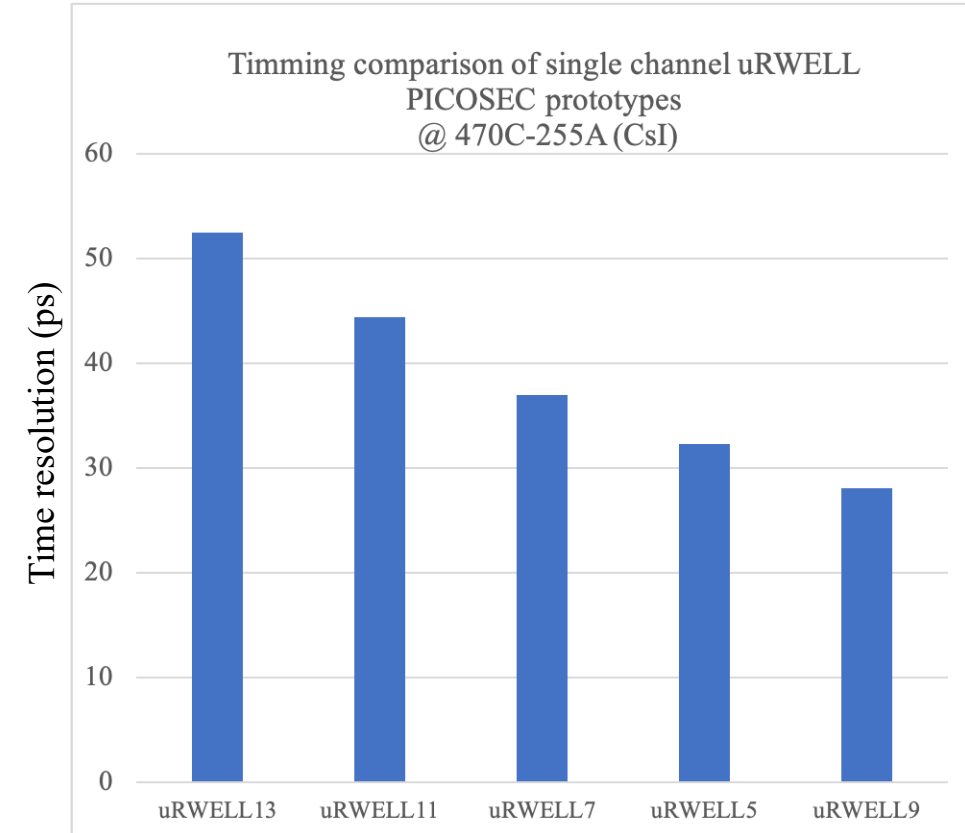


<b>Pitch</b> ( $\mu\text{m}$ )	100	120	120	100	120
<b>Hole(o)</b> ( $\mu\text{m}$ )	80	100	100	80	100
<b>Hole(i)</b> ( $\mu\text{m}$ )	60	80	80	60	80
<b>Hole shape</b>	Round	Round	Square	Round	Round
<b>Readout</b>	Grided	Grided	Plain	Plain	Plain
<b>Spacer</b> ( $\mu\text{m}$ )	170	170	170	170	170

## Time resolution at same Cathode-Anode voltage settings

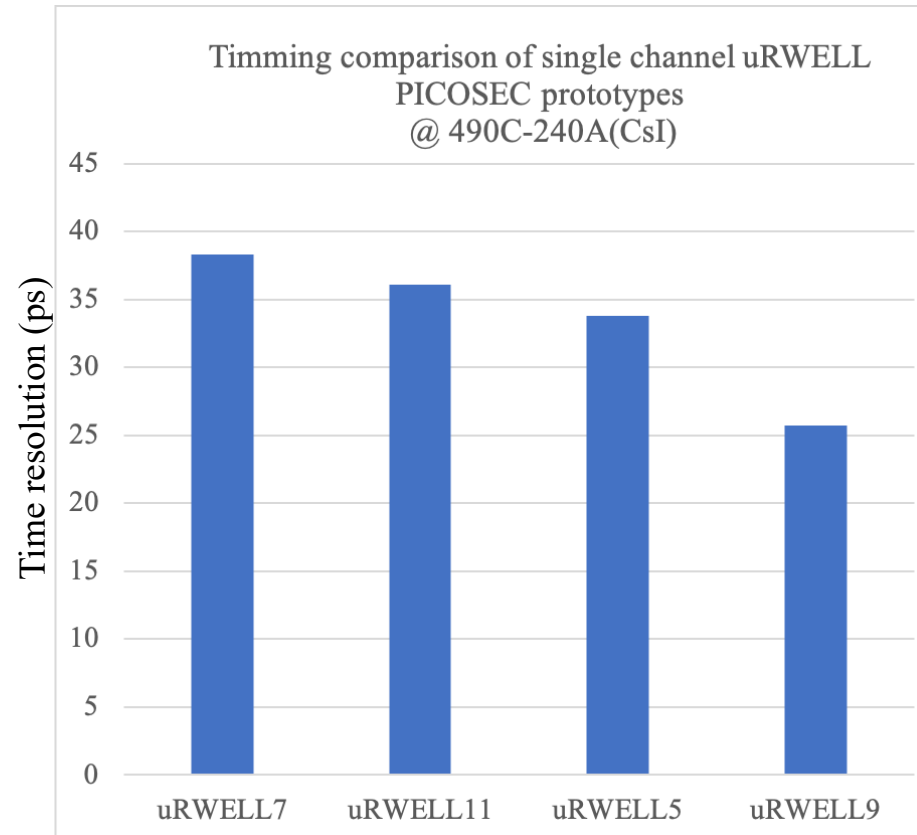


<b>Pitch</b> ( $\mu\text{m}$ )	120	100	120	120
<b>Hole(o)</b> ( $\mu\text{m}$ )	100	80	100	100
<b>Hole(i)</b> ( $\mu\text{m}$ )	80	60	80	80
<b>Hole shape</b>	Round	Round	Square	Round
<b>Readout</b>	Grided	Grided	Plain	Plain
<b>Spacer</b> ( $\mu\text{m}$ )	170	170	170	170



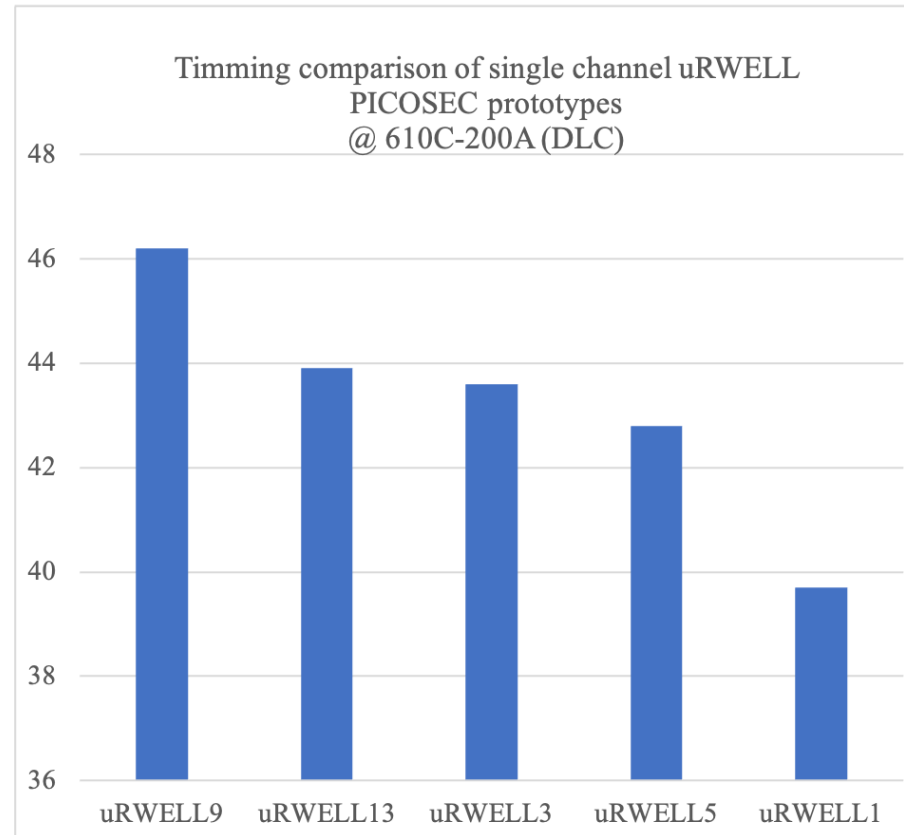
<b>Pitch</b> ( $\mu\text{m}$ )	80	100	120	120	100
<b>Hole(o)</b> ( $\mu\text{m}$ )	60	80	100	100	80
<b>Hole(i)</b> ( $\mu\text{m}$ )	40	60	80	80	60
<b>Hole shape</b>	Square	Round	Round	Round	Round
<b>Readout</b>	Plain	Grided	Grided	Plain	Plain
<b>Spacer</b> ( $\mu\text{m}$ )	170	170	170	170	170

## Time resolution at same Cathode-Anode voltage settings



<b>Pitch</b> ( $\mu\text{m}$ )	120	100	120	100
<b>Hole(o)</b> ( $\mu\text{m}$ )	100	80	100	80
<b>Hole(i)</b> ( $\mu\text{m}$ )	80	60	80	60
<b>Hole shape</b>	Round	Round	Round	Round
<b>Readout</b>	Grided	Grided	Plain	Plain
<b>Spacer</b> ( $\mu\text{m}$ )	170	170	170	170

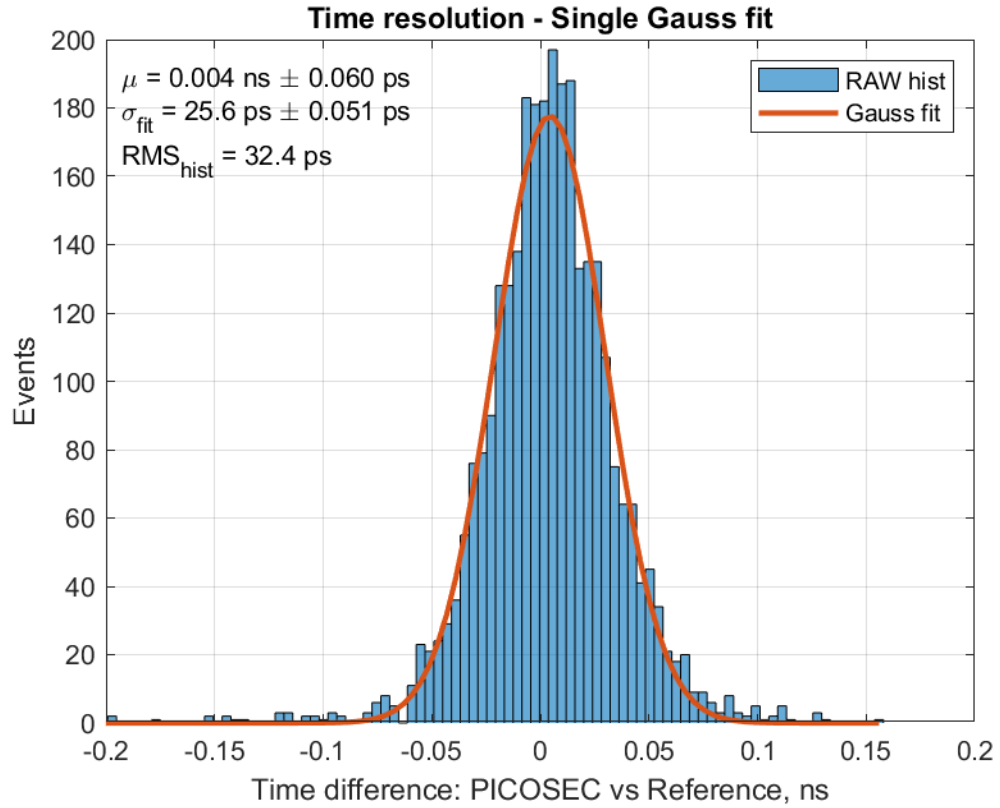
## Time resolution at same Cathode-Anode voltage settings



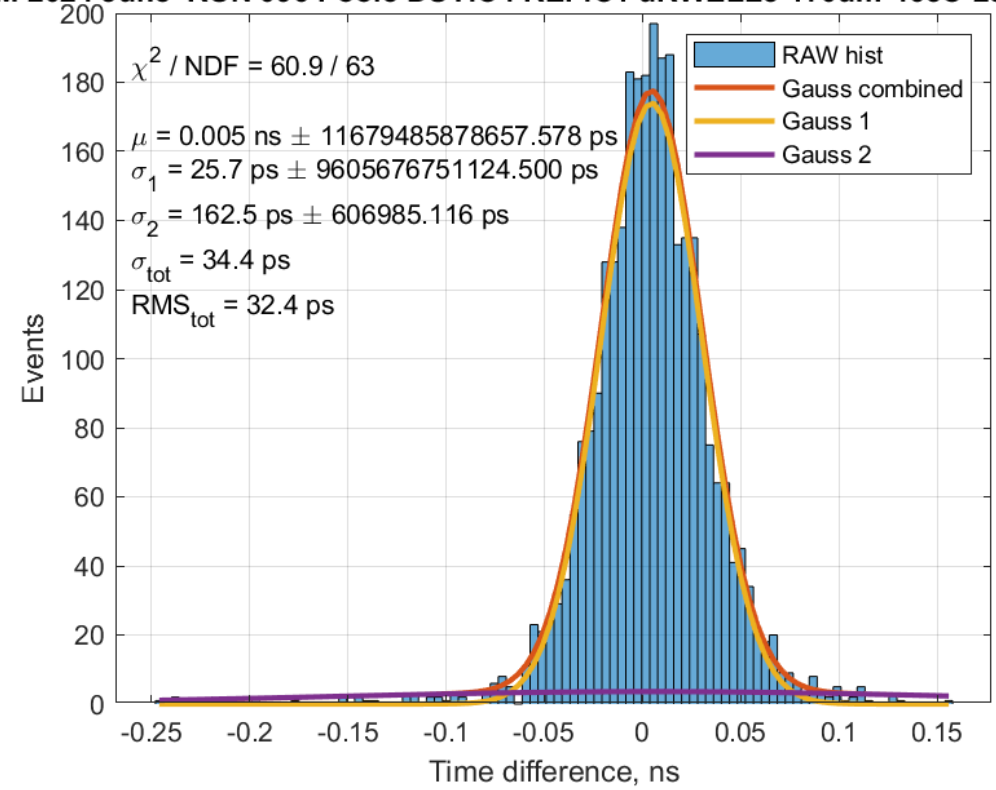
<b>Pitch (<math>\mu\text{m}</math>)</b>	100	80	120	120	120
<b>Hole(o) (<math>\mu\text{m}</math>)</b>	80	60	100	100	100
<b>Hole(i) (<math>\mu\text{m}</math>)</b>	60	40	80	80	80
<b>Hole shape</b>	Round	Square	Square	Round	Square
<b>Readout</b>	Plain	Plain	Grided	Plain	Plain
<b>Spacer (<math>\mu\text{m}</math>)</b>	170	170	170	170	170

Backup

AM 2024 June RUN 096 Pool5 DUT:C4 REF:C1 uRWELL5-170um-465C-250A-Csl



Single Gauss



Narrow Gauss