

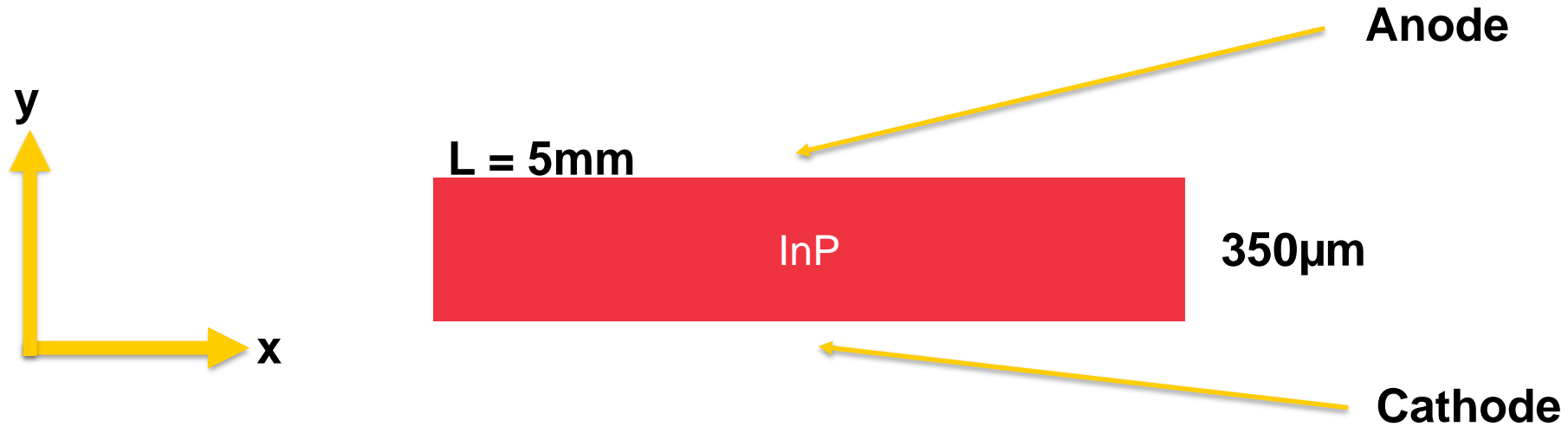


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HEP InP Update June 22, 2026



Undoped Structure





Importing Optical Generation Profile into SDE

```
;;; 4. Load optical generation profile
;; -- Get the node number of the opticalprofile tool for this experiment --
(define ref_node "@node|opticalprofile@")
;; -- Construct path to the scaled optical generation file --
(define OptFile (string-append "scaled_Gopt_node" ref_node ".plx"))

;; -- Define the 1D external profile --
(sdedr:define-1d-external-profile "1d_opt_def" OptFile
  "Scale" 1.0 "Range" 0 T)

(sdedr:define-refeval-window "globalopt_window" "Line"
  (position 0 0 0)
  (position L 0 0))

;; "Positive" = profile runs from Y=0 upward (cathode to anode)
(sdedr:define-analytical-profile-placement "1d_opt_place"
  "1d_opt_def" "globalopt_window"
  "Positive" "NoReplace" "Eval")
```

T = Thickness

(350 μ m)

**L = Lateral length
of the device**

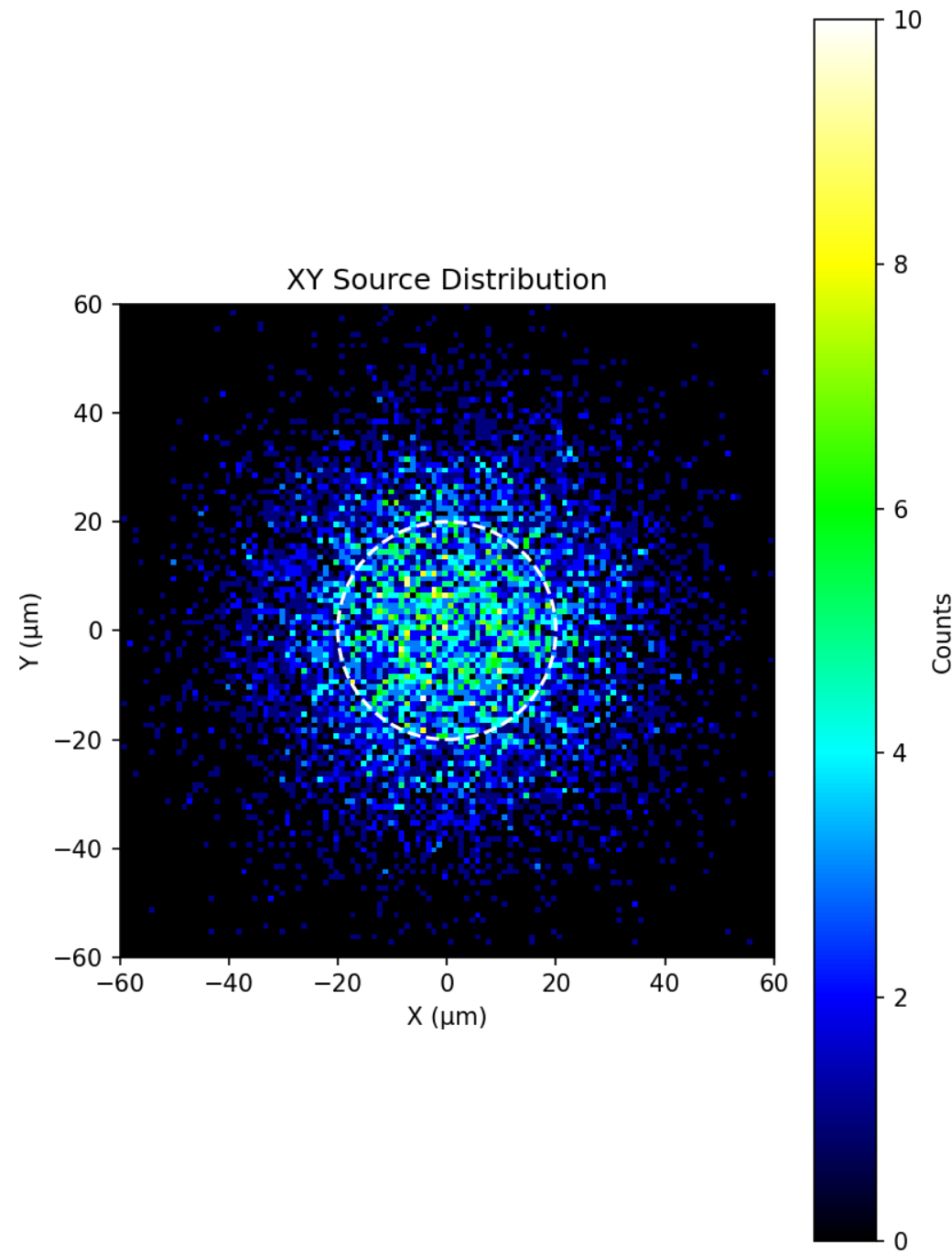
(5mm)



Importing Optical Generation into SDevice

```
File {  
    Grid = "@tdr@"  
    Parameters = "@parameter@"  
    Plot = "@tdrdat@"  
    Current = "@plot@"  
    Output = "@log@"  
    OpticalGenerationInput= "@tdr@"  
}  
  
#if "@light@" == "on"  
    Optics( OpticalGeneration( ReadFromFile() ) )  
#endif
```











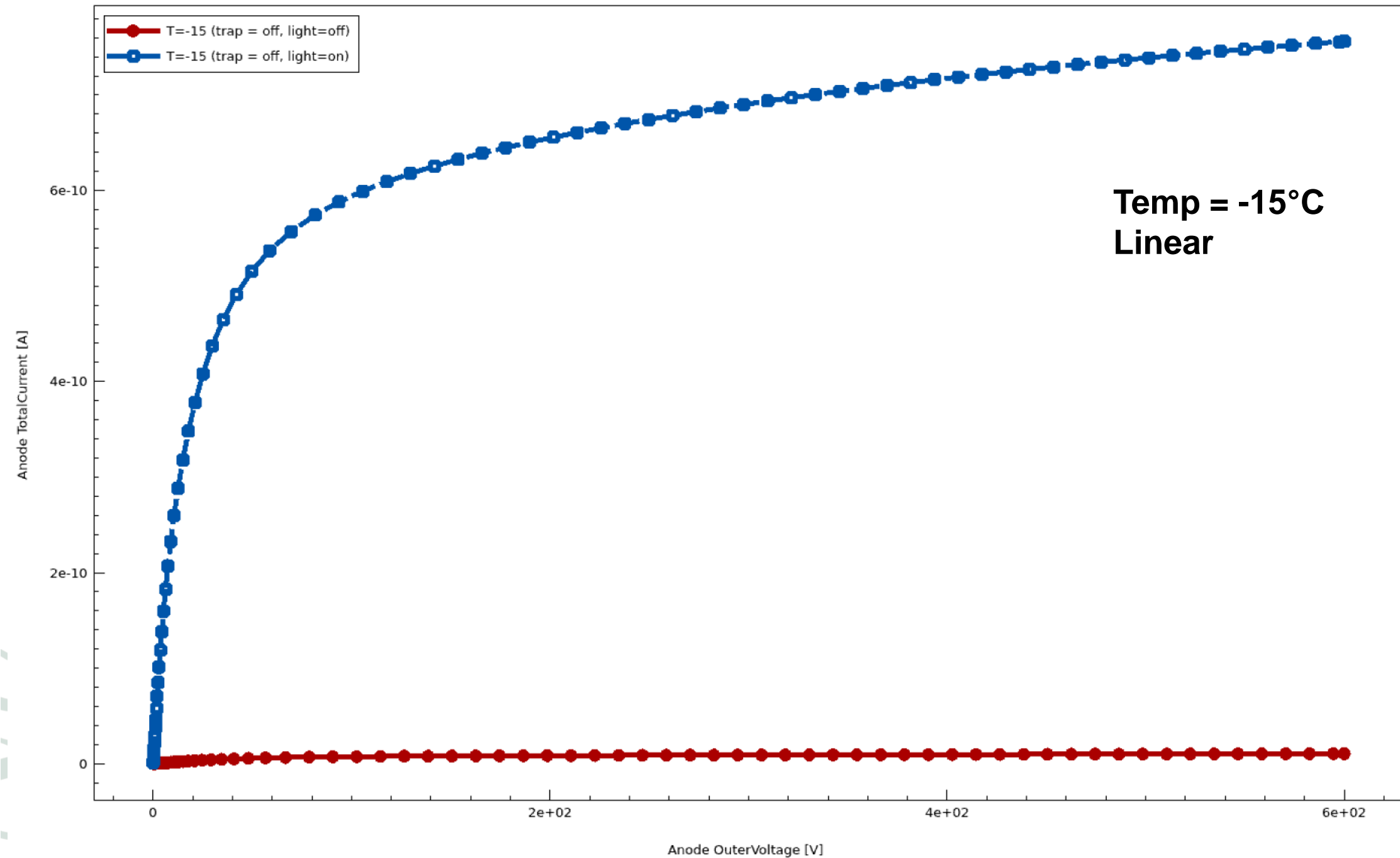


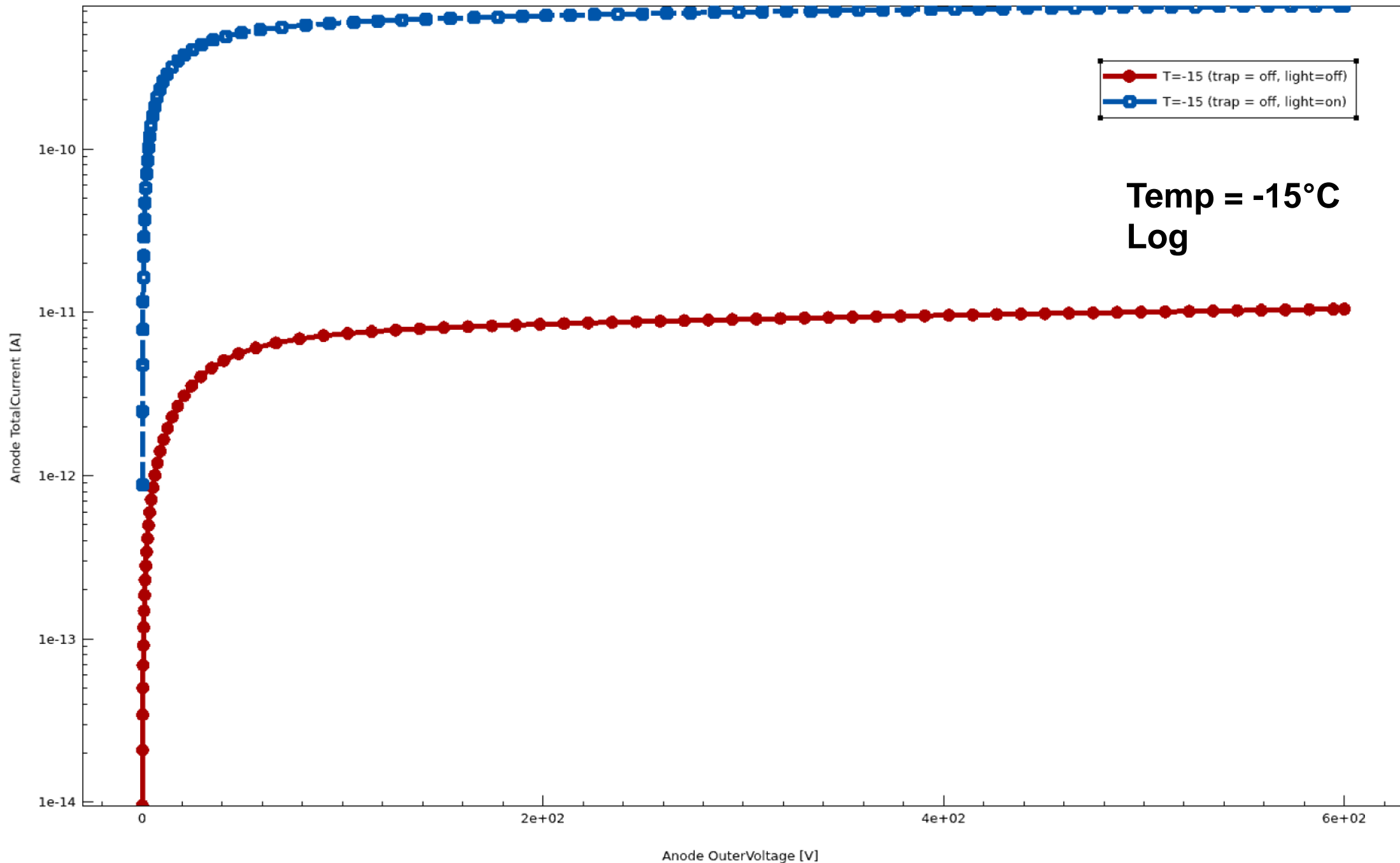
Anode is located at $y=0$
Cathode is located at $y=350$

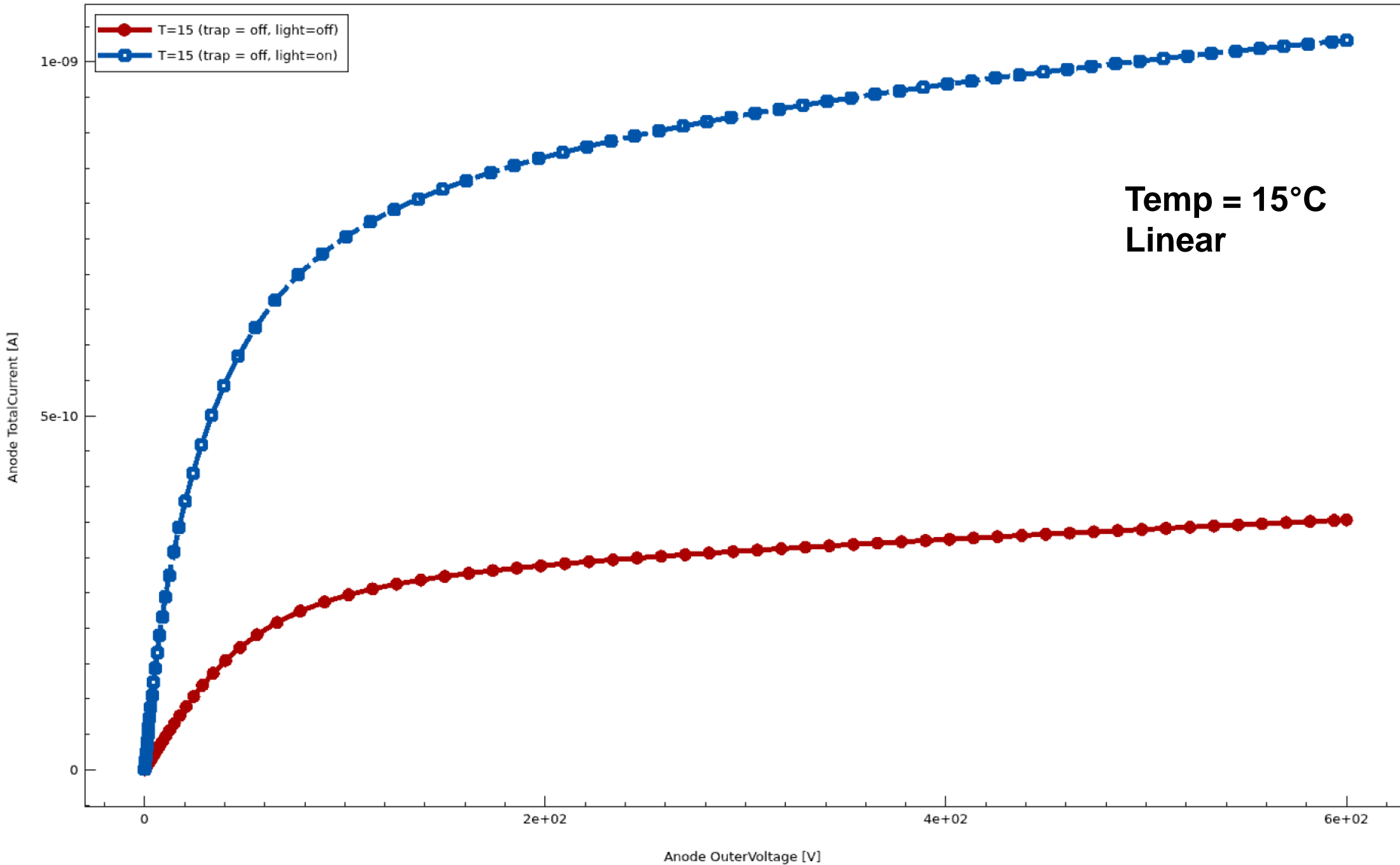
X $5e+03$ $4e+03$ $3e+03$ $2e+03$ $1e+03$ $-2e+03$

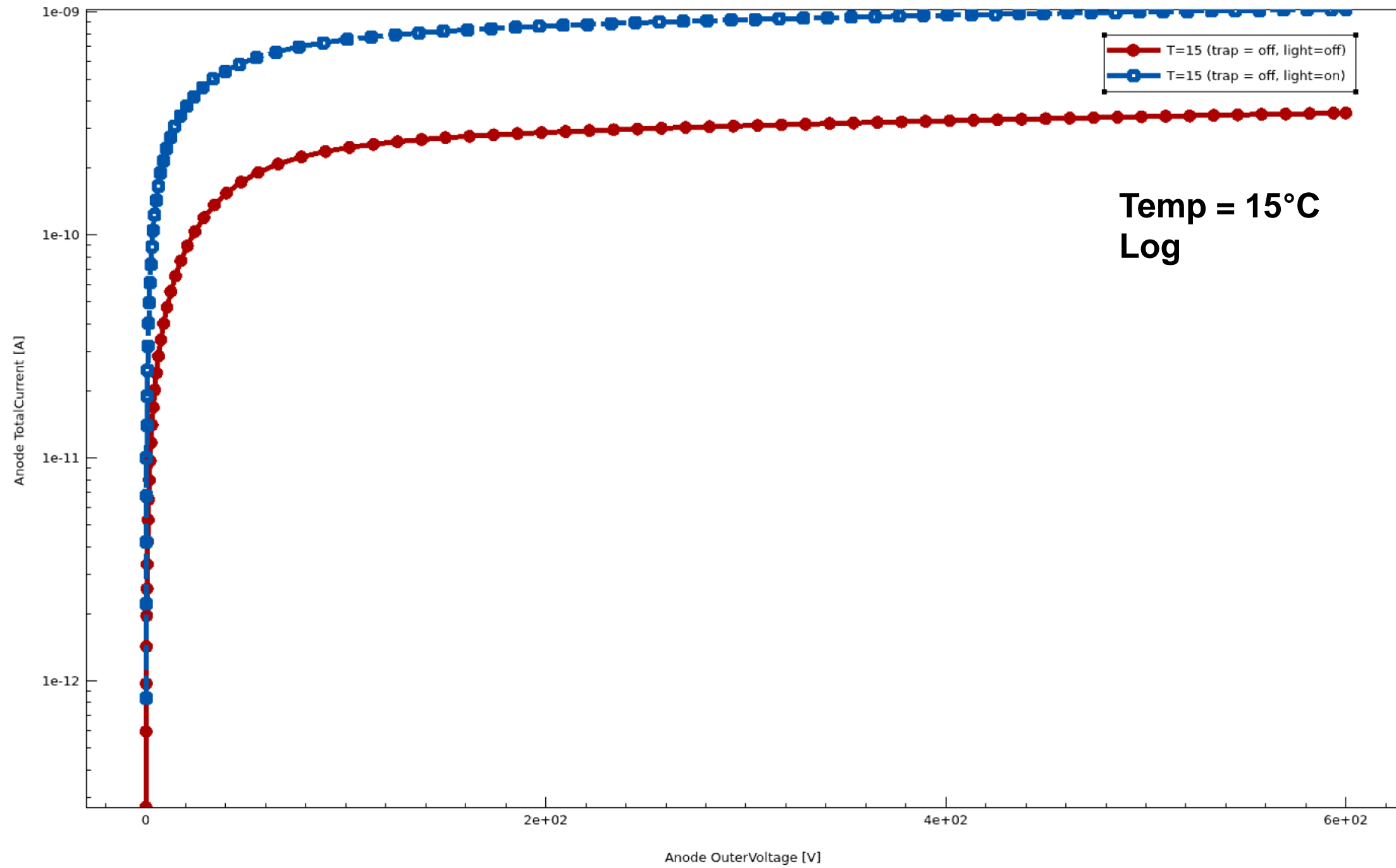
0

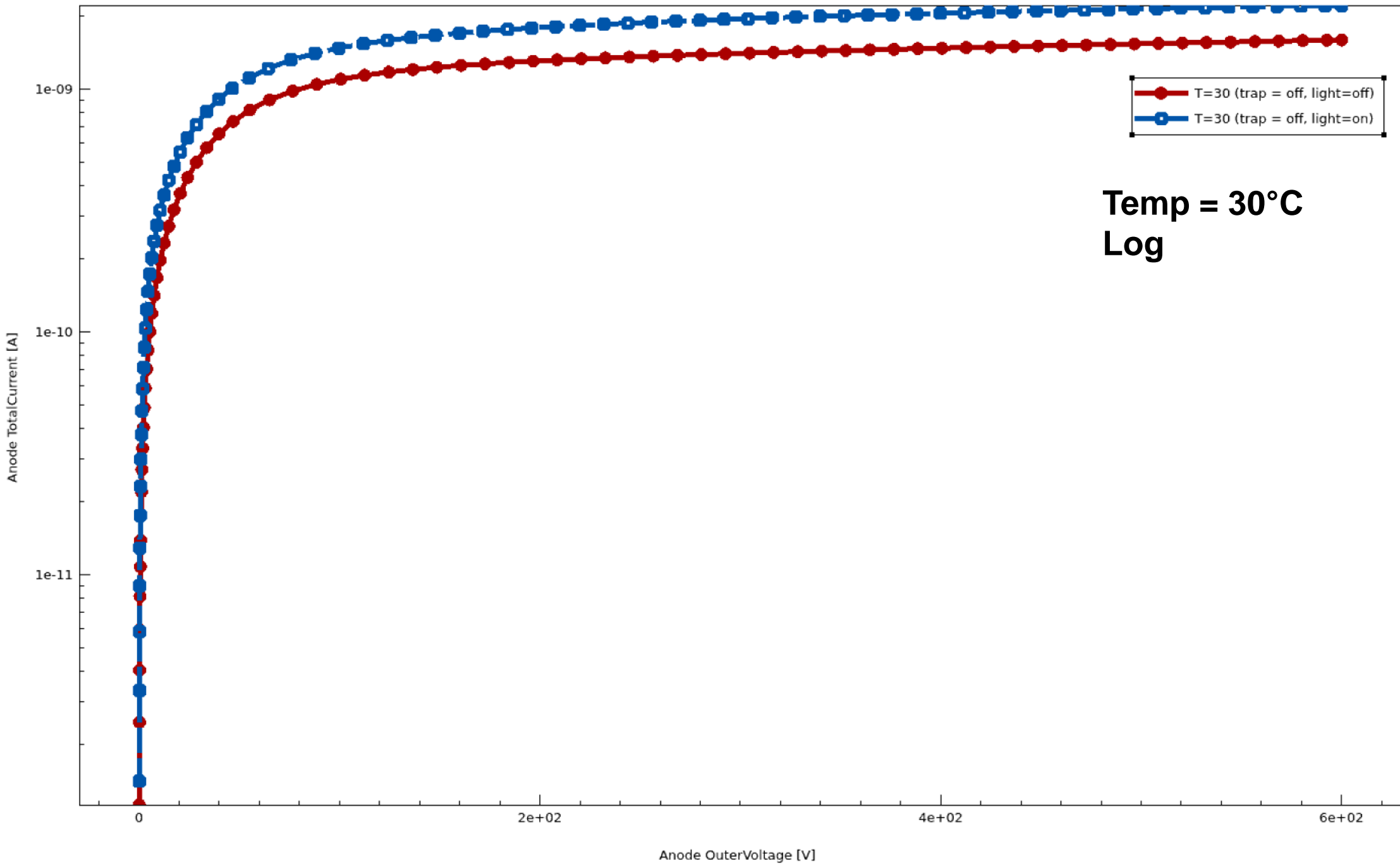
Y $2e+03$ $4e+03$ OpticalGeneration (cm⁻³s⁻¹) $2.246e+16$  $2.674e+15$  $3.183e+14$  $3.789e+13$  $4.456e+12$  $7.164e+10$  $-3.846e+12$

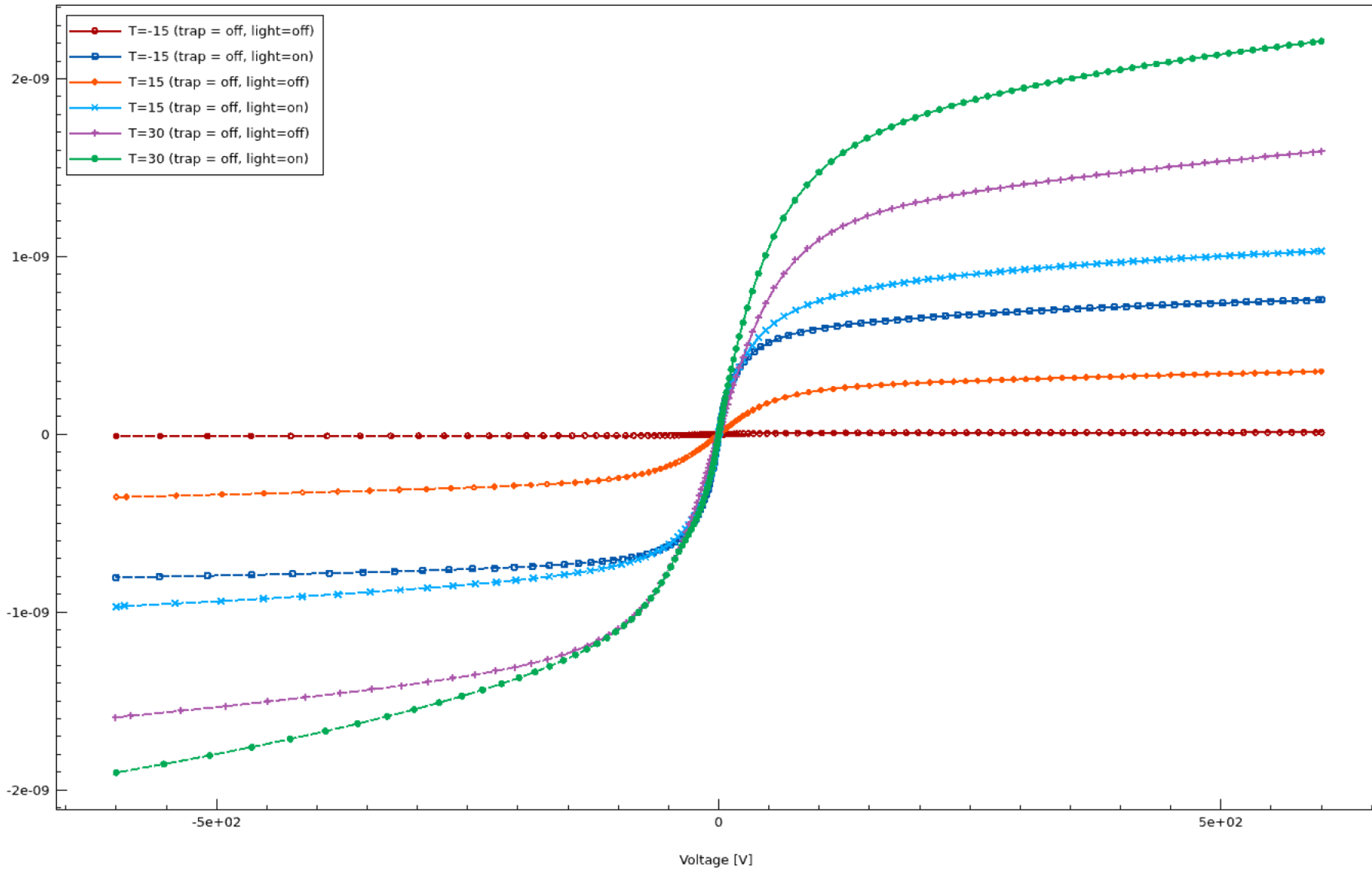


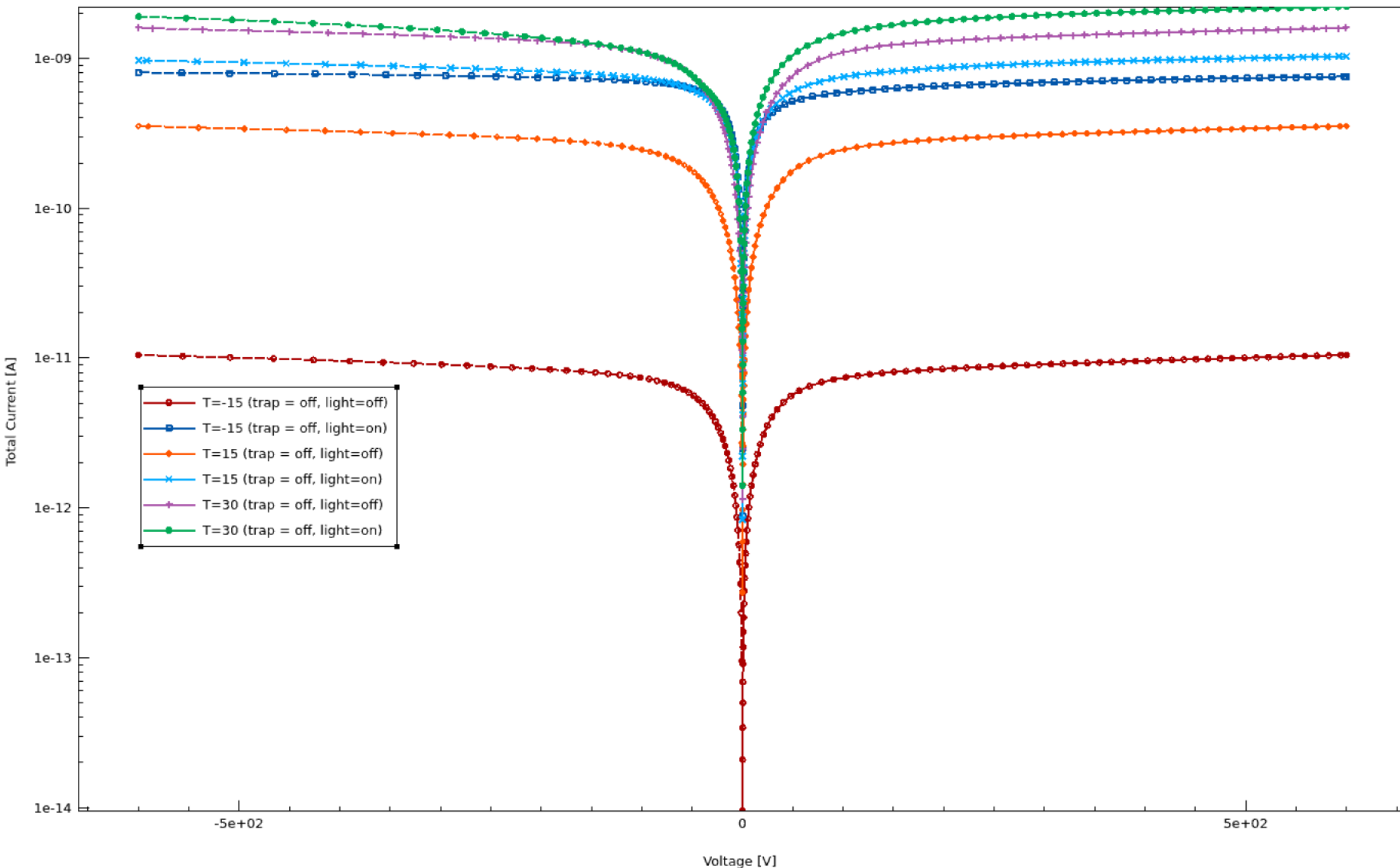












Still waiting for trap on simulation results

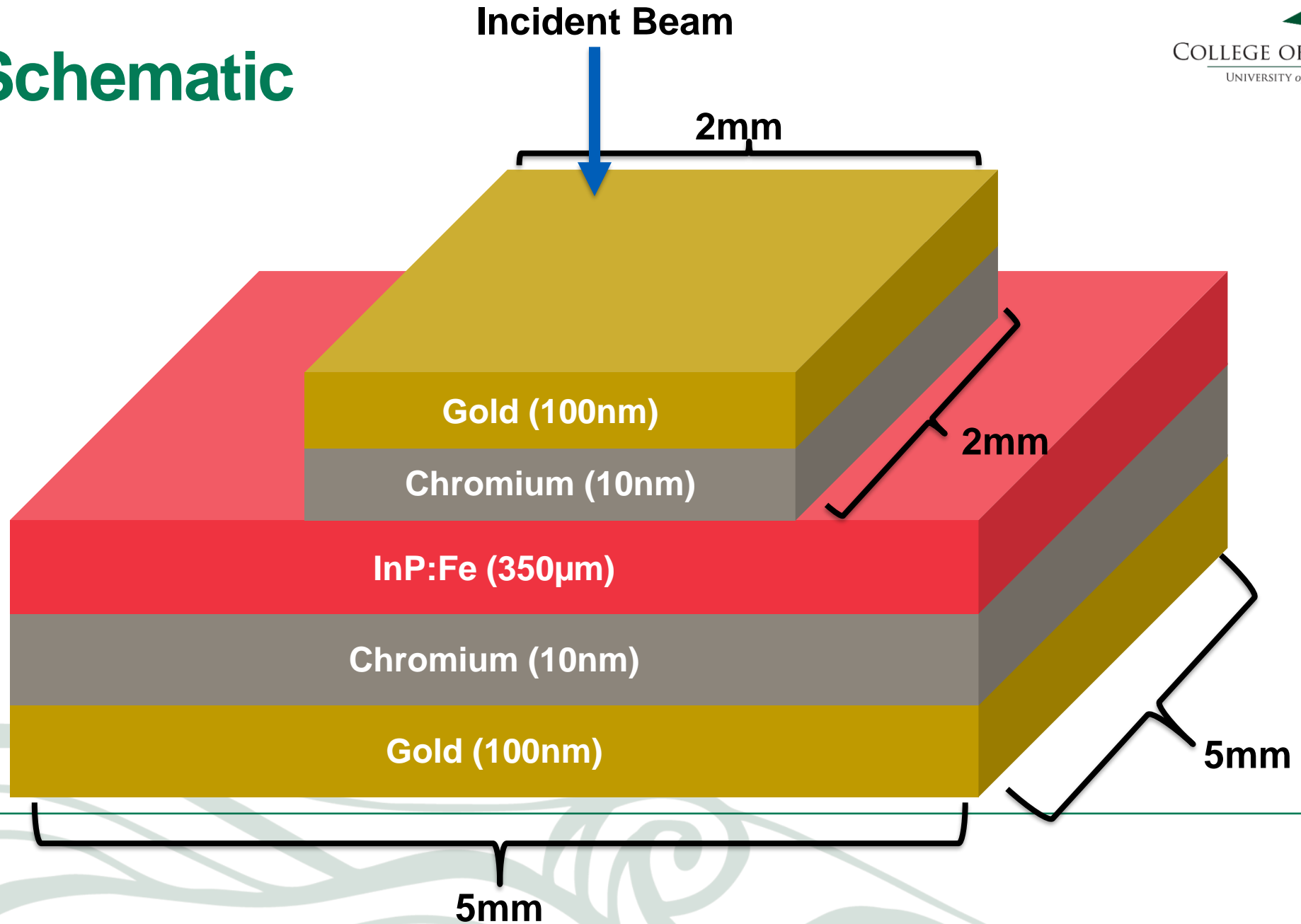


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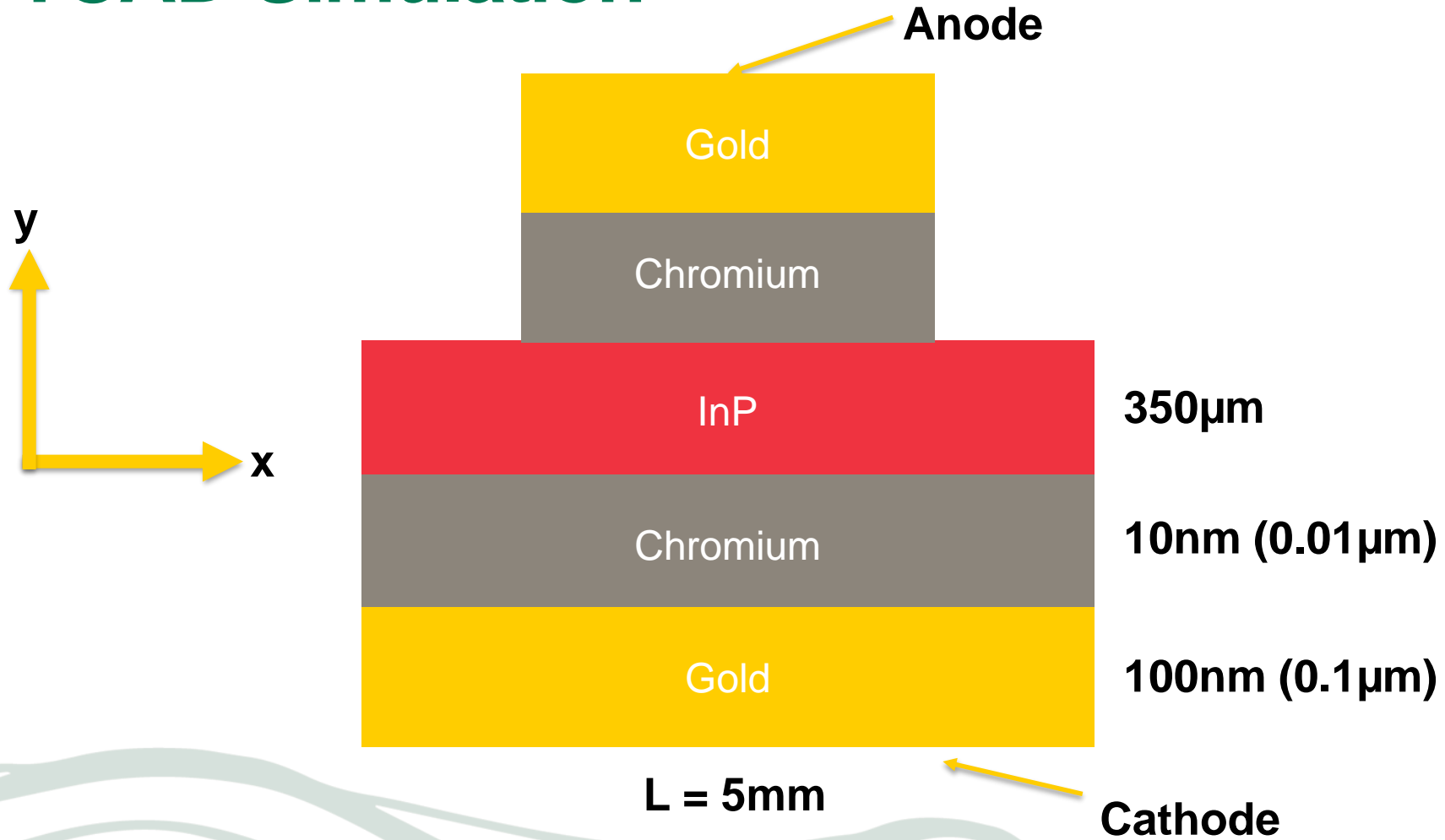


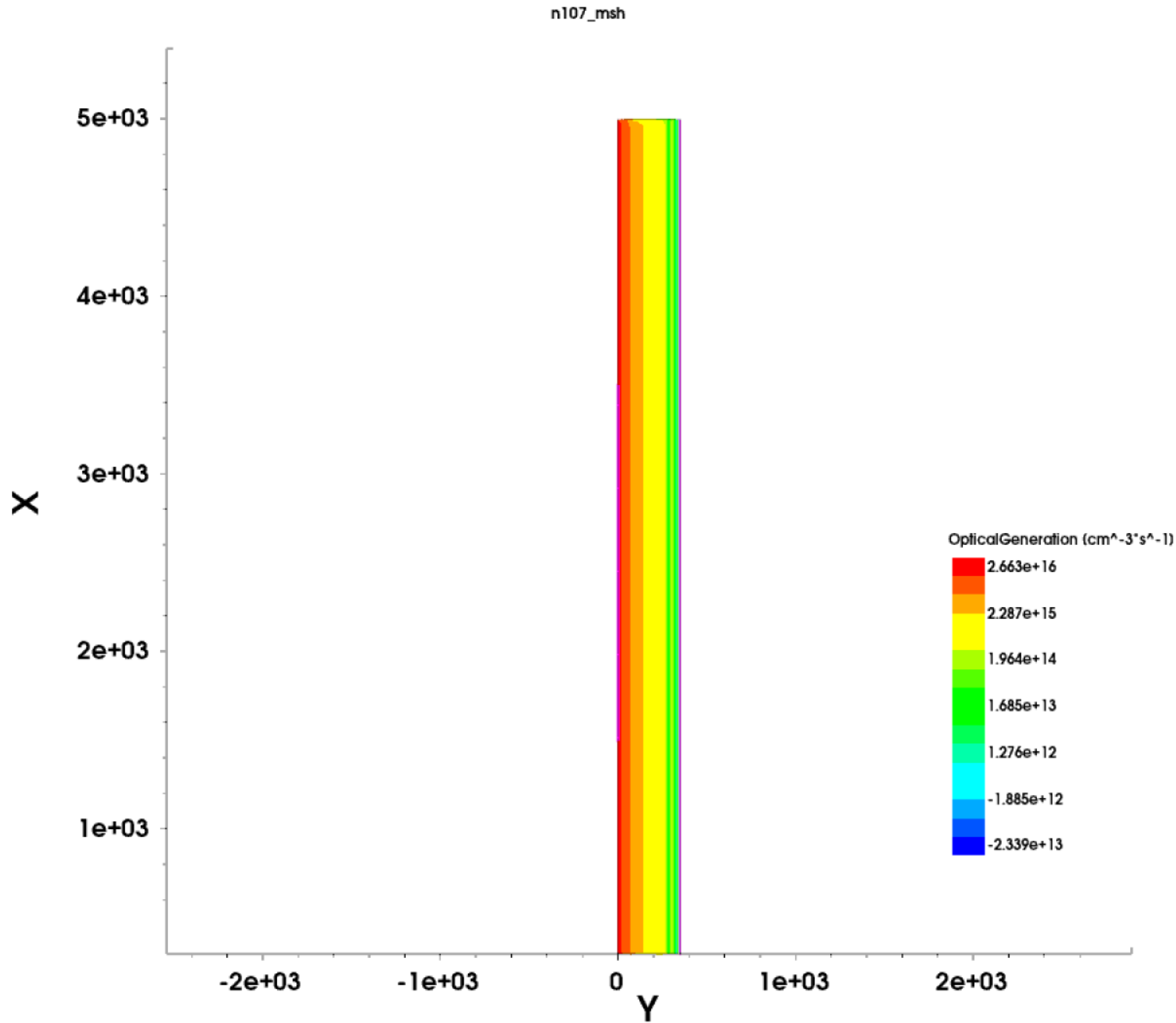
Basic Schematic

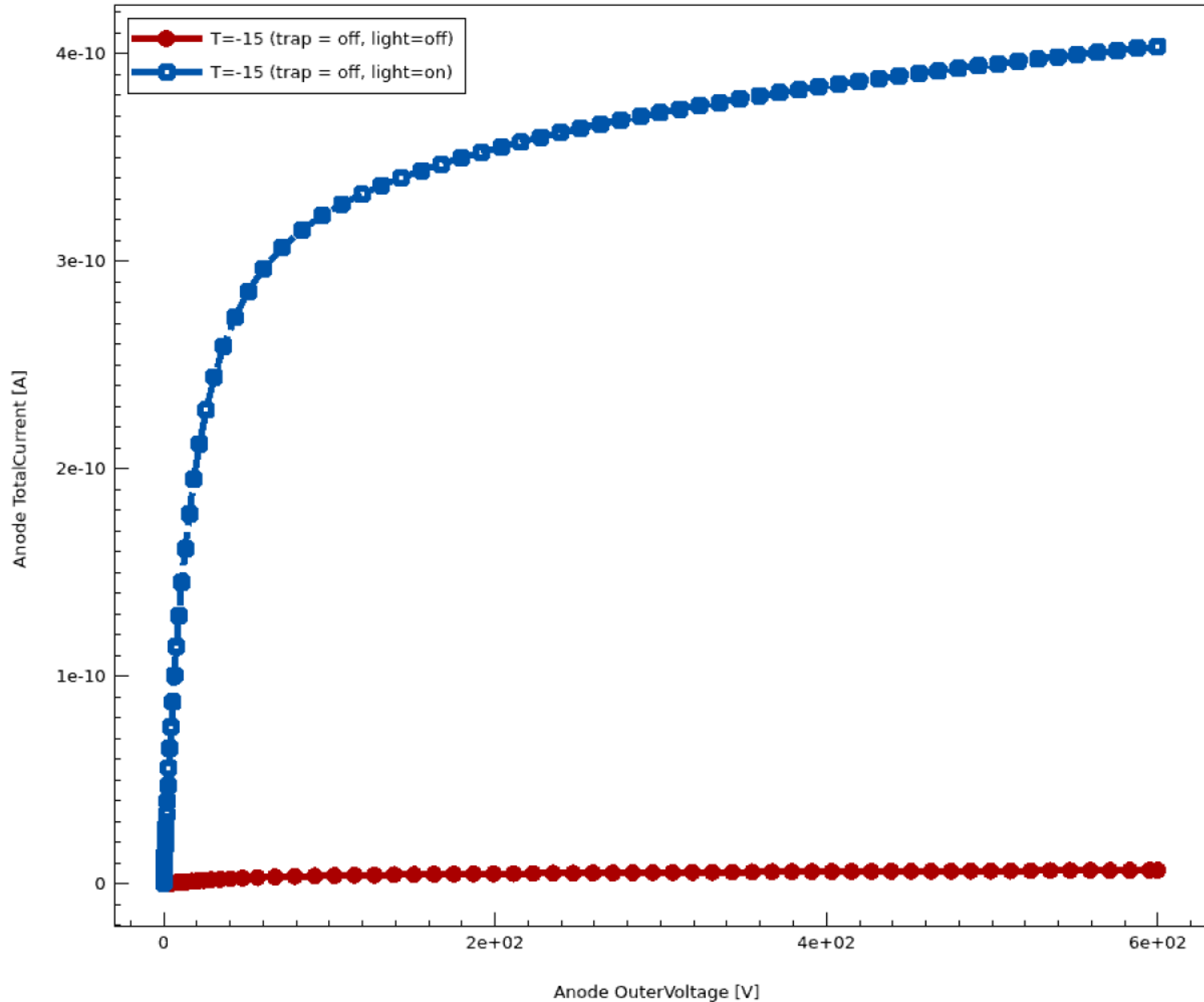




2D TCAD Simulation



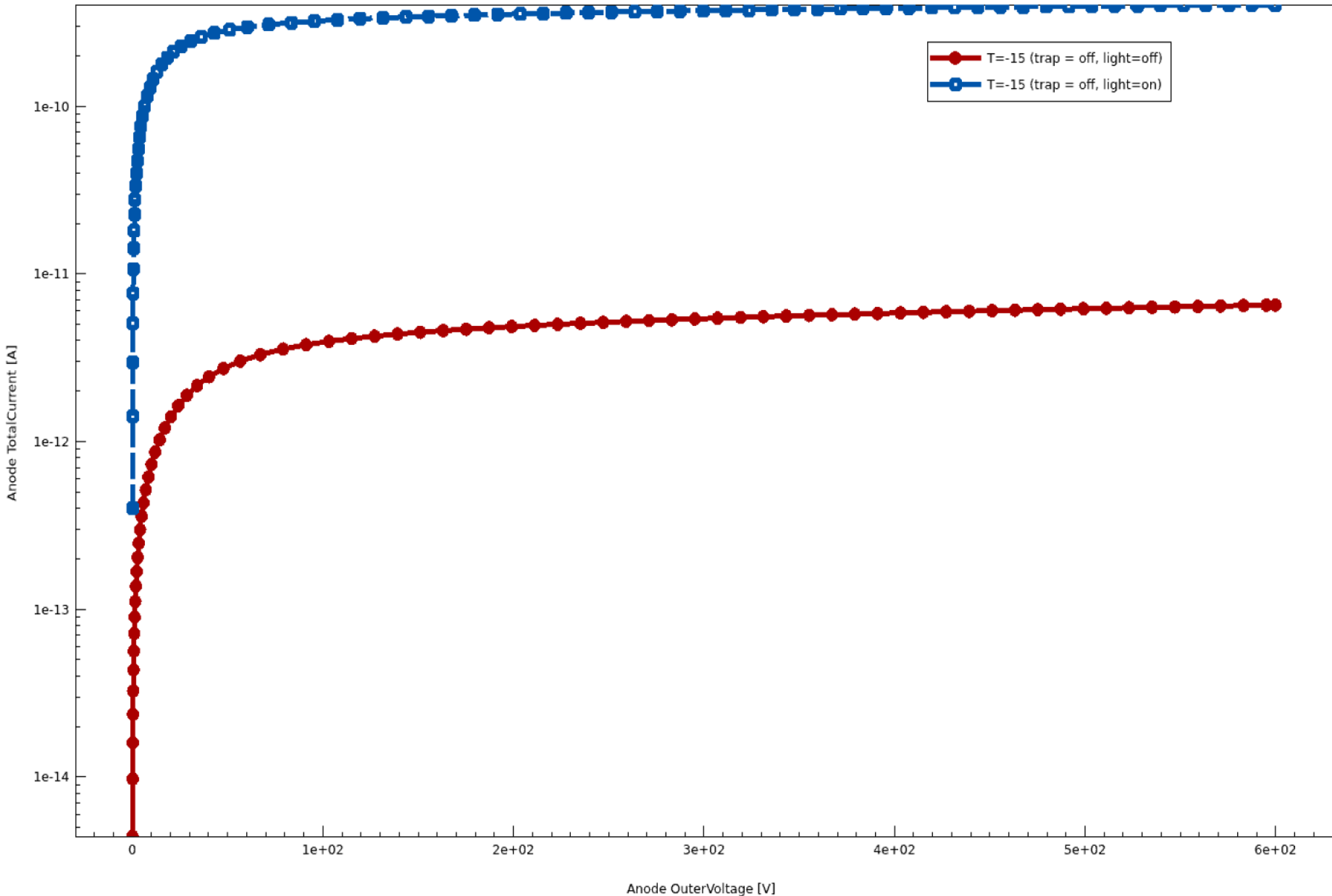




Temp = -15°C
Linear

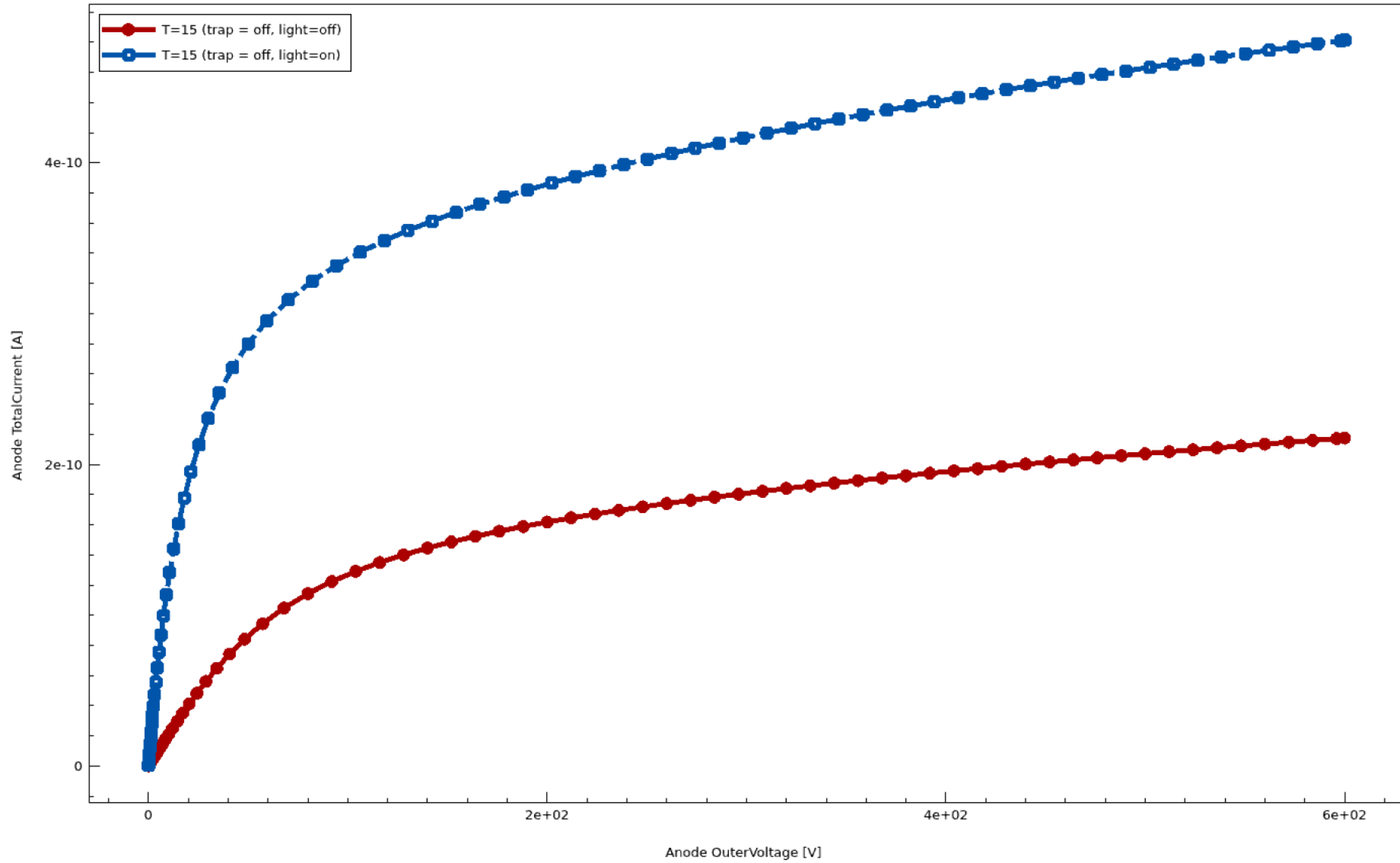


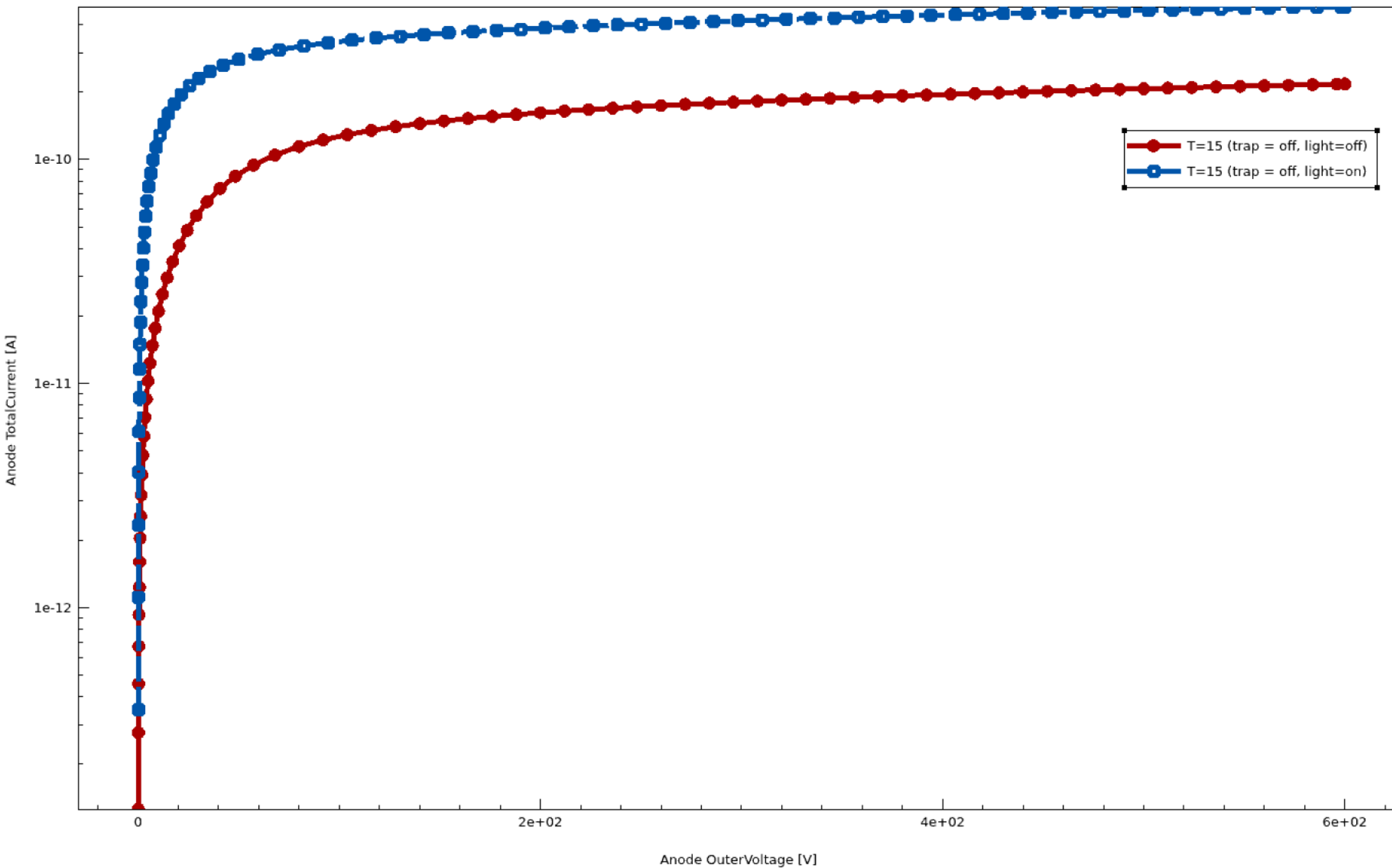
Temp = -15°C
Log



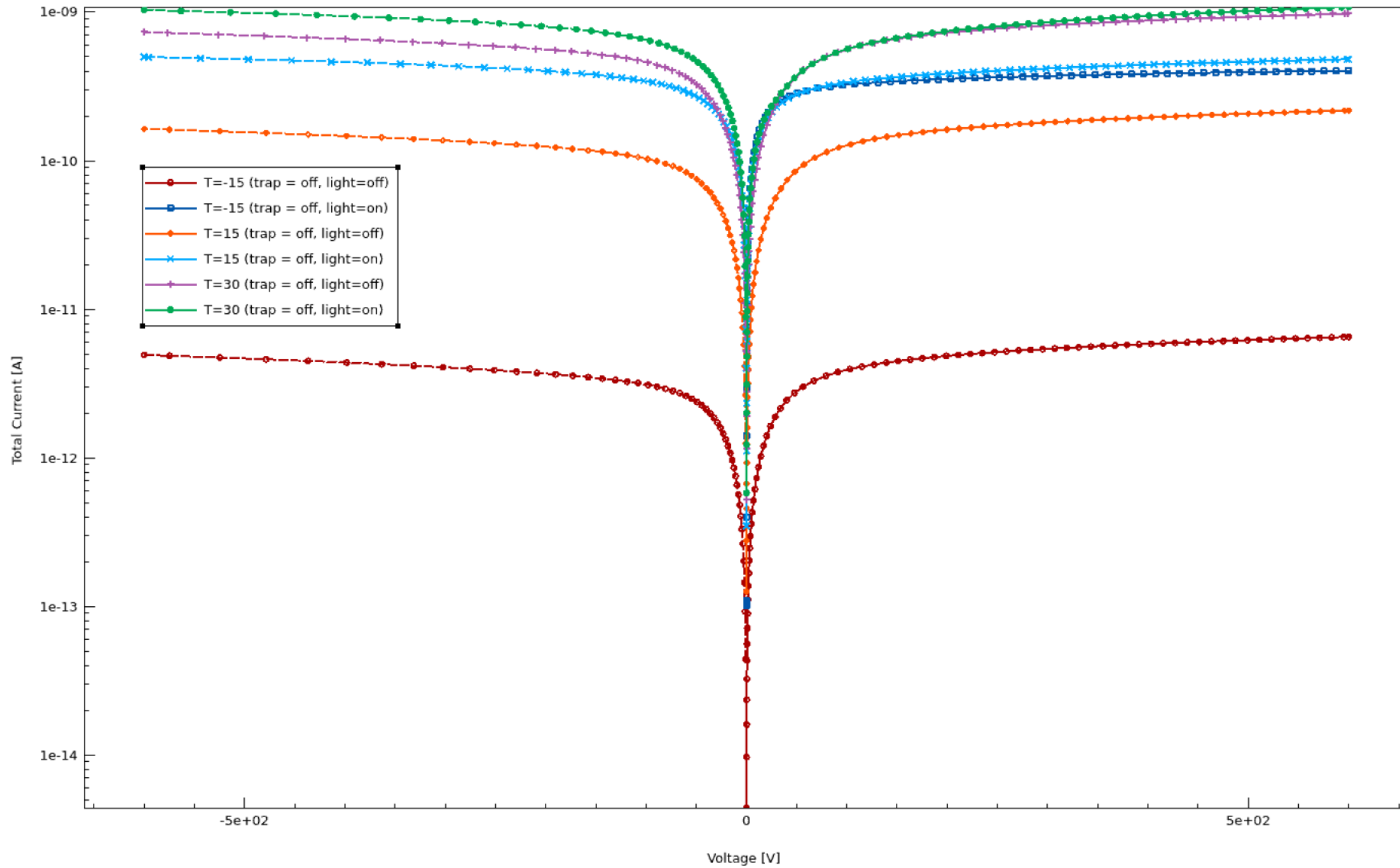


Temp = 15°C
Linear





Temp = 15°C
Log



Log

Still waiting for trap on simulation results



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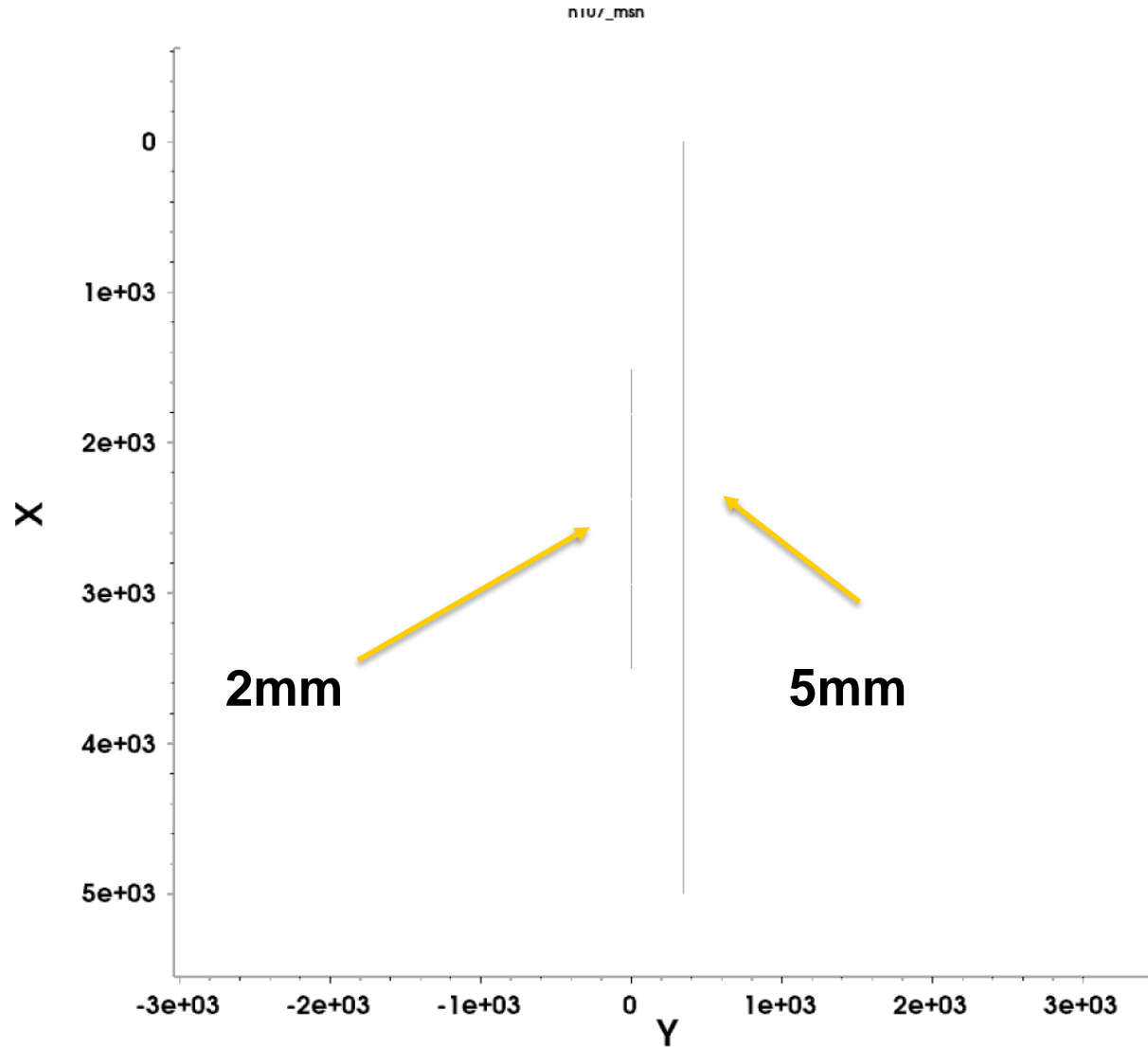




Backup Slides



Contact Check





**Anode is located at $y=0$
Cathode is located at $y=350$**

X

0
1e+03
2e+03
3e+03
4e+03
5e+03

-2e+03

0

Y

2e+03

4e+03

n1_msh

OpticalGeneration (cm⁻³*s⁻¹)

