HW #12

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Comparison between Nonlinear Poisson equation solver and Self-consistent solver

1. Environment setting

1) Long type

600-nm-long version (Long)

- 100 nm: Highly doped ($5x10^{17}$ cm^{-3})
- 400 nm: Lowly doped ($2x10^{15}$ cm^{-3})
- 100 nm: Highly doped ($5x10^{17}$ cm^{-3})

2) Short type

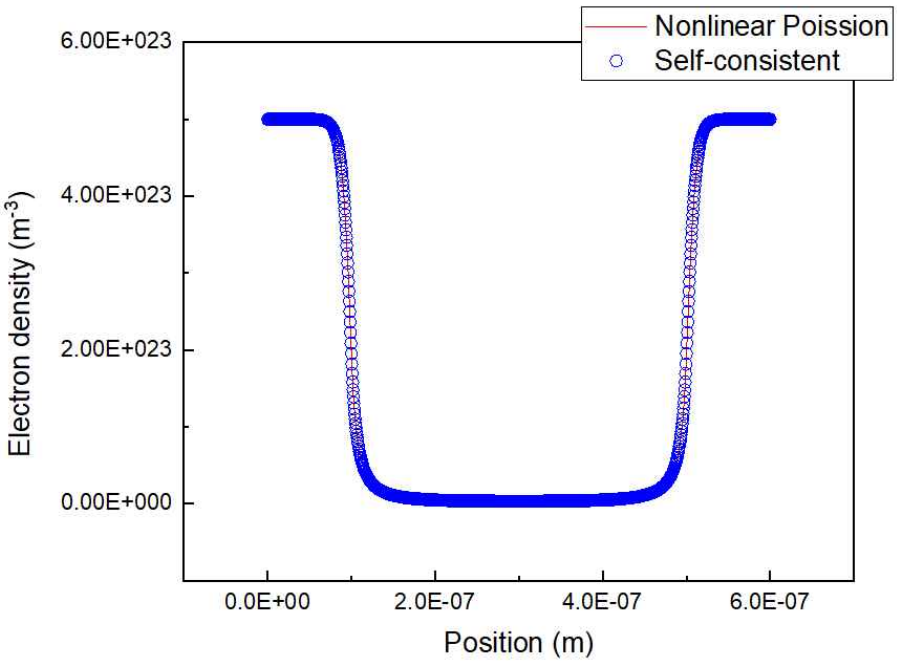
120-nm-long version (Short)

- 40 nm: Highly doped ($5x10^{19}$ cm^{-3})
- 40 nm: Lowly doped ($2x10^{17}$ cm^{-3})
- 40 nm: Highly doped ($5x10^{19}$ cm^{-3})

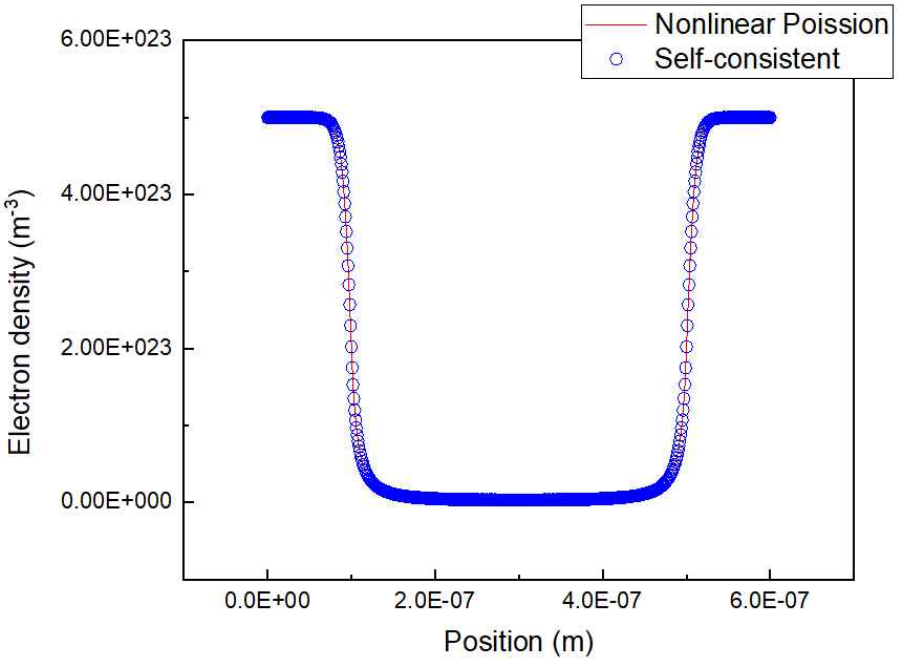
2. Result

1) Long type case.

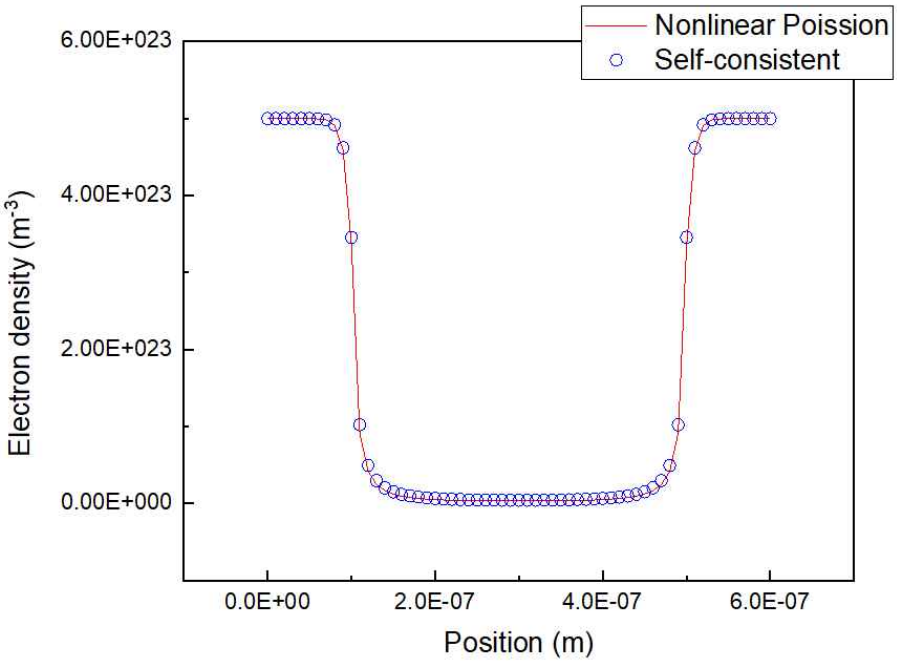
a) spacing value = 0.5nm



b) spacing value = 1nm

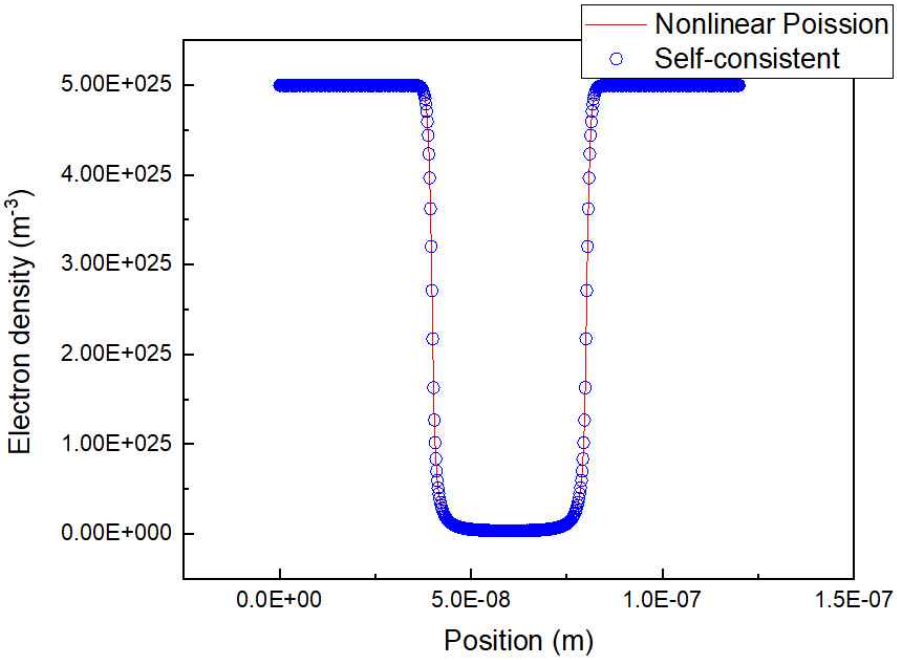


c) spacing value = 10nm

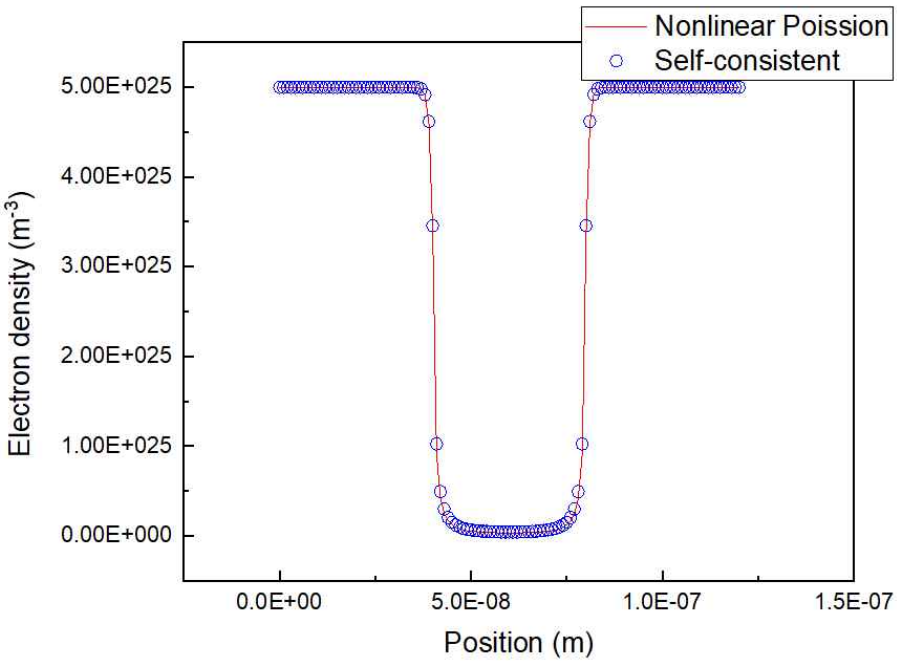


2) Short type case.

a) spacing value = 0.2nm



b) spacing value = 1nm



c) spacing value = 5nm