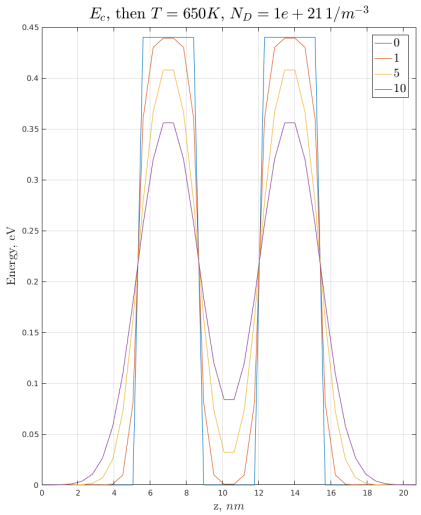
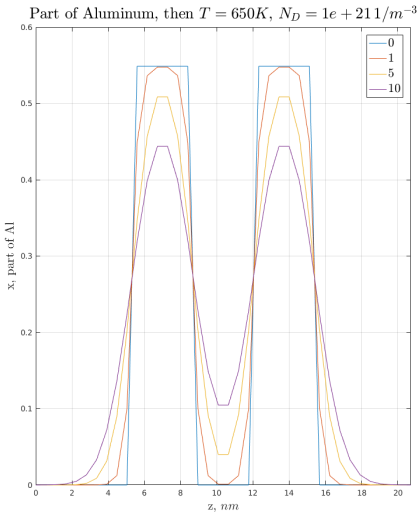
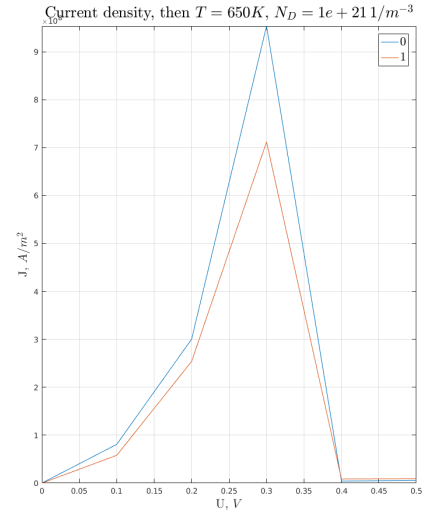
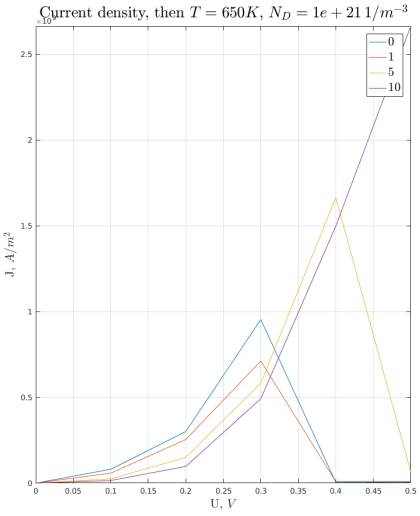
```
% Img 4.5, 4.6
clear; clc;

e = 1.6e-19; eVtoJ = e; JtoEv = e^(-1);
me = 9.11*1e-31; nm = 1e-9;

T = 650; % K

checkTime = [0, 1, 5, 10]; %years

% atoms' radius
dx = 0.56; %nm

% Count layers
a = 10; % monolayers
b = 6;
c = 6;

sizeHS = a + b + c + b + a;


% Fermi Energy
EFermi = 1.51*1e-20; % J

% Applyied voltage
dU = 0:0.1:0.5;

% grid of Al conentration
grid_x_Al = [zeros(1, a), ...
 0.44*ones(1, b), ...
 zeros(1, c), ...
 0.44*ones(1, b), ...
 zeros(1, a)
];

Nd = 1e15*1e6;
% Get profile Ec
[grids_Ec, grids_meff, grids_C_Al] = getDiffOpenAlGaAsNd( grid_x_Al,
 checkTime, dx*nm, T, 5e15*1e6 );

% get J from V
for j = 1 : length(checkTime)
 J(j, :) = getJ(dx*nm, ...
  grids_meff(j, :)*me, ...
  grids_Ec(j, :)*eVtoJ, ...
  dU*eVtoJ, ...
  EFermi...
 );
end

showResult(grids_C_Al, grids_Ec, checkTime, J, sizeHS, dx, T, dU,
 Nd); % Img 4.5, 4.6
```

```
outResult =

     1
```









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