
```
% Img 3.8, 3.9
clear; clc;

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

% Do it smooth
dis = 1;
% atoms' radius
dx = 0.56; %nm
dx = dx/dis;

% Count layers
a = [3, 7, 10, 15]; % monolayers
b = 6;
c = 6;

a = a*dis;
b = b*dis;
c = c*dis;

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

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

% Applyied voltage
dU = 0:0.01:0.6;

% Ec
Ec1 = [zeros(1, a(1)), 0.5*ones(1, b), zeros(1, c), 0.5*ones(1, b),
zeros(1, a(1))];
Ec2 = [zeros(1, a(2)), 0.5*ones(1, b), zeros(1, c), 0.5*ones(1, b),
zeros(1, a(2))];
Ec3 = [zeros(1, a(3)), 0.5*ones(1, b), zeros(1, c), 0.5*ones(1, b),
zeros(1, a(3))];
Ec4 = [zeros(1, a(4)), 0.5*ones(1, b), zeros(1, c), 0.5*ones(1, b),
zeros(1, a(4))];

% meff
meff1 = [0.067*ones(1, a(1)), 0.15*ones(1, b), 0.067*ones(1, c),
0.15*ones(1, b), 0.067*ones(1, a(1))];
meff2 = [0.067*ones(1, a(2)), 0.15*ones(1, b), 0.067*ones(1, c),
0.15*ones(1, b), 0.067*ones(1, a(2))];
meff3 = [0.067*ones(1, a(3)), 0.15*ones(1, b), 0.067*ones(1, c),
0.15*ones(1, b), 0.067*ones(1, a(3))];
meff4 = [0.067*ones(1, a(4)), 0.15*ones(1, b), 0.067*ones(1, c),
0.15*ones(1, b), 0.067*ones(1, a(4))];

numPoint = 5000;

Tr1 = getTransperent(...
```

```

    dx*nm, ...
    meff1*me, ...
    Ec1*eVtoJ, ...
    numPoint...
);

J1 = getJ(dx*nm, ...
    meff1*me, ...
    Ec1*eVtoJ, ...
    dU*eVtoJ, ...
    EFermi...
);
Tr2 = getTransperent(...
    dx*nm, ...
    meff2*me, ...
    Ec2*eVtoJ, ...
    numPoint...
);

J2 = getJ(dx*nm, ...
    meff2*me, ...
    Ec2*eVtoJ, ...
    dU*eVtoJ, ...
    EFermi...
);

Tr3 = getTransperent(...
    dx*nm, ...
    meff3*me, ...
    Ec3*eVtoJ, ...
    numPoint...
);

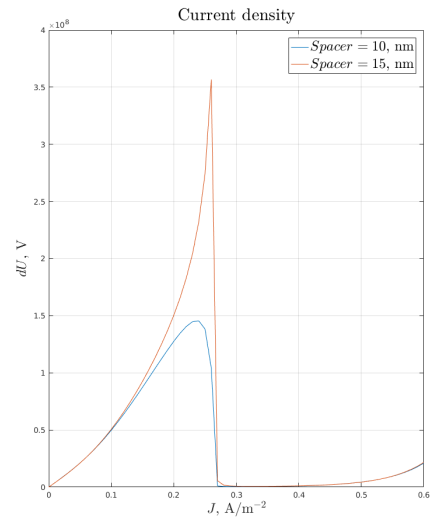
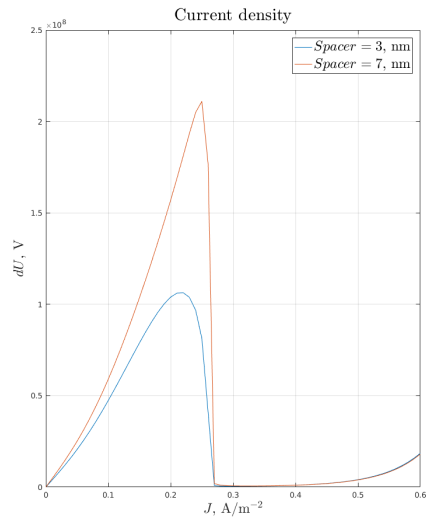
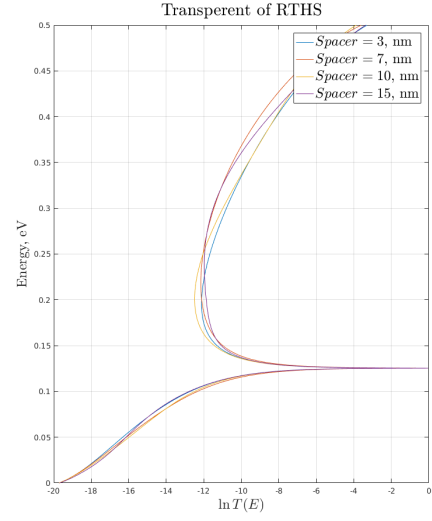
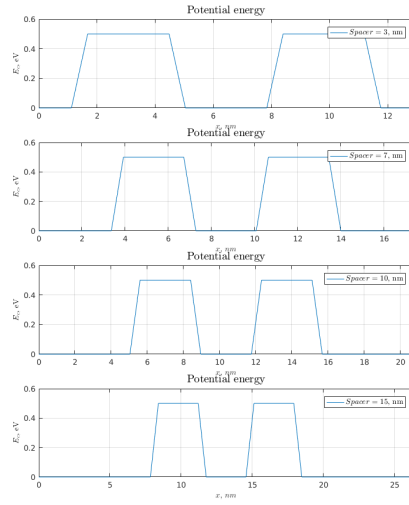
J3 = getJ(dx*nm, ...
    meff3*me, ...
    Ec3*eVtoJ, ...
    dU*eVtoJ, ...
    EFermi...
);

Tr4 = getTransperent(...
    dx*nm, ...
    meff4*me, ...
    Ec4*eVtoJ, ...
    numPoint...
);

J4 = getJ(dx*nm, ...
    meff4*me, ...
    Ec4*eVtoJ, ...
    dU*eVtoJ, ...
    EFermi...
);

```

```
showResult(dx*nm, sizeHS, Ec1, Ec2, Ec3, Ec4, J1, J2, J3, J4, dU, Tr1,
Tr2, Tr3, Tr4, a); % Img 3.8, 3.9
```



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