```
% getJ: function description dx, meff, Ec, Ez
function J = getJ(dx, meff, Ec, dU, EFermi)
    e = 1.6e-19; eVtoJ = e; JtoEv = e^(-1);
    hbar = 1.054*1e-34; k_B = 1.38e-23;
    T = 300;
    kT = T*k_B;

    k = ((2*meff(1)*e*kT)/(4*pi^2*hbar^3));
    J = k*ones(1, length(dU));

    % Count layers
    % Reserves
    r = 5;
    % Active field
    a = 8; % monolayers
    b = 5;
    c = 6;

    % ni = 1e12;
    % Nd = 1e24;
    % Ni = [Nd*ones(1, r), ni*ones(1, a), ni*ones(1, b), ni*ones(1, c), ni*ones(1, b), ni*ones(1, a), Nd*ones(1, r)];

    % eps = 13.18 - 3.12*[zeros(1, r), zeros(1, a), ones(1, b), zeros(1, c), ones(1, b), zeros(1, a), zeros(1, r)];

    for j = 1:length(dU)
        % [V, n] = getConcentrationElectrons(0.0001, [Ec(1)*ones(1, r), Ec, Ec(end)*ones(1, r)]*eVtoJ, [meff(1)*ones(1, r), meff, meff(end)*ones(1, r)], Ni, eps, dx, dU(j), r + 1, r + length(Ec));
        % Uj = Ec - linspace( 0, dU(j), length(Ec) ) - V(r+1:length(Ec)+r)*eVtoJ;
        Uj = Ec - linspace( 0, dU(j), length(Ec) );
        dTDEz = @(Ez) TDEz(dx, meff, Uj, Ez, EFermi);
        J(j) = J(j)*integral(dTDEz, 0, max(Uj), 'AbsTol', 1e-30);
    end
end
```