

```
1. %% getEc_AlGaAs: function description
2. function [Ec, meff] = getEcAlGaAs(C_Al)
3.     n_Atoms = 4.42*1e28;
4.     n_Al = n_Atoms/2;
5.     x = C_Al./n_Al;
6.
7.     more45 = double(x >= 0.45);
8.     more45 = 0.232*more45 - 0.259*more45.*x + 1.147*more45.*x.^2;
9.
10.    less45 = double(x < 0.45);
11.    less45 = 0.773*less45.*x;
12.
13.    Ec = more45 + less45;
14.    Ec = Ec - min(Ec);
15.
16.    meff = 0.067 + 0.083*x;
17. end
```