In[13]:=
```
m = .0358 * 10^6 / (2.998 * 10^8)^2;(* eV/c^2 *)
V1 = .5;(* eV *)
V2 = 1.13;(* eV *)
L1 = 4 * 10^-9; (* m *)
L2 = 3 * 10^-9; (* m *)
G = 3.6 * 10^-9; (* m *)
hb = 6.582 * 10^-16 ;(* eV*s *)
kp2 = Sqrt[2 * m * (E0 - V2) / hb^2];
kp1 = Sqrt[2 * m * (E0 - V1) / hb^2];
kf = Sqrt[2 * m * E0 / hb^2];
```

In[23]:=
```
P1 = Inverse[{{1, 1}, {kf, -kf}}].{{1, 1}, {kp1, -kp1}};
```

In[24]:=
```
P2 = Inverse[{{Exp[I * kp1 * L1], Exp[-I * kp1 * L1]},
      {kp1 * Exp[I * kp1 * L1], -kp1 * Exp[-I * kp1 * L1]}}].
    {{Exp[I * kf * L1], Exp[-I * kf * L1]}, {kf * Exp[I * kf * L1], -kf * Exp[-I * kf * L1]}};
```

In[25]:=
```
P3 = Inverse[{{Exp[I * kf * (G + L1)], Exp[-I * kf * (G + L1)]},
      {kf * Exp[I * kf * (G + L1)], -kf * Exp[-I * kf * (G + L1)]}}].
    {{Exp[I * kp2 * (G + L1)], Exp[-I * kp2 * (G + L1)]},
     {kp2 * Exp[I * kp2 * (L1 + G)], -kp2 * Exp[-I * kp2 * (L1 + G)]}};
```

In[26]:=
```
P4 = Inverse[{{Exp[I * kp2 * (G + L1 + L2)], Exp[-I * kp2 * (G + L1 + L2)]},
      {kp2 * Exp[I * kp2 * (G + L1 + L2)], -kp2 * Exp[-I * kp2 * (G + L1 + L2)]}}].
    {{Exp[I * kf * (G + L1 + L2)], Exp[-I * kf * (G + L1 + L2)]},
     {kf * Exp[I * kf * (G + L1 + L2)], -kf * Exp[-I * kf * (G + L1 + L2)]}};
```

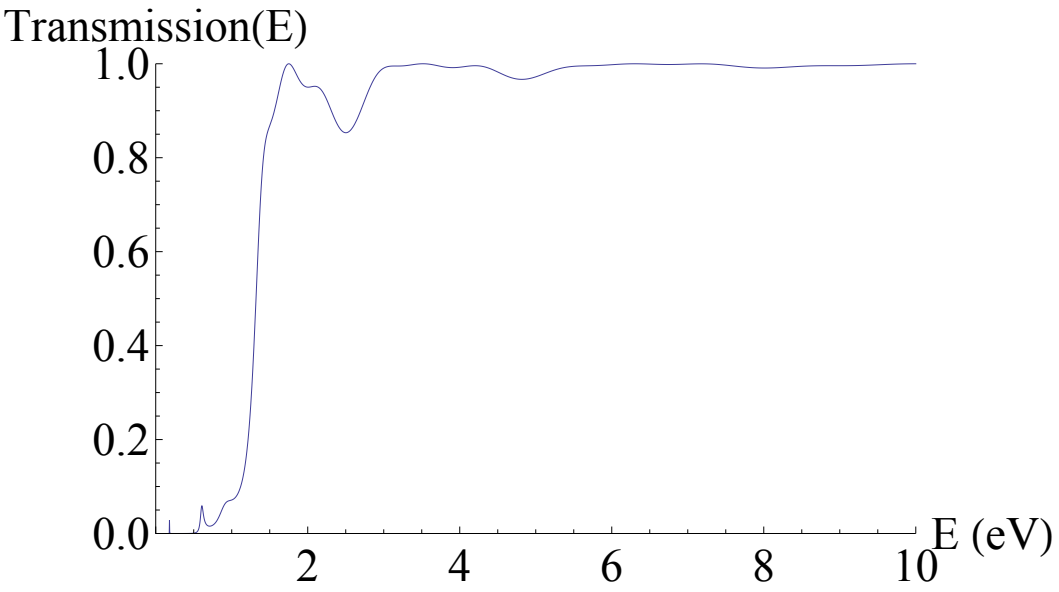
In[27]:=
```
TransMat = P1.P2.P3.P4;
```

In[28]:=
```
TC = TransMat[[1]][[1]];
```

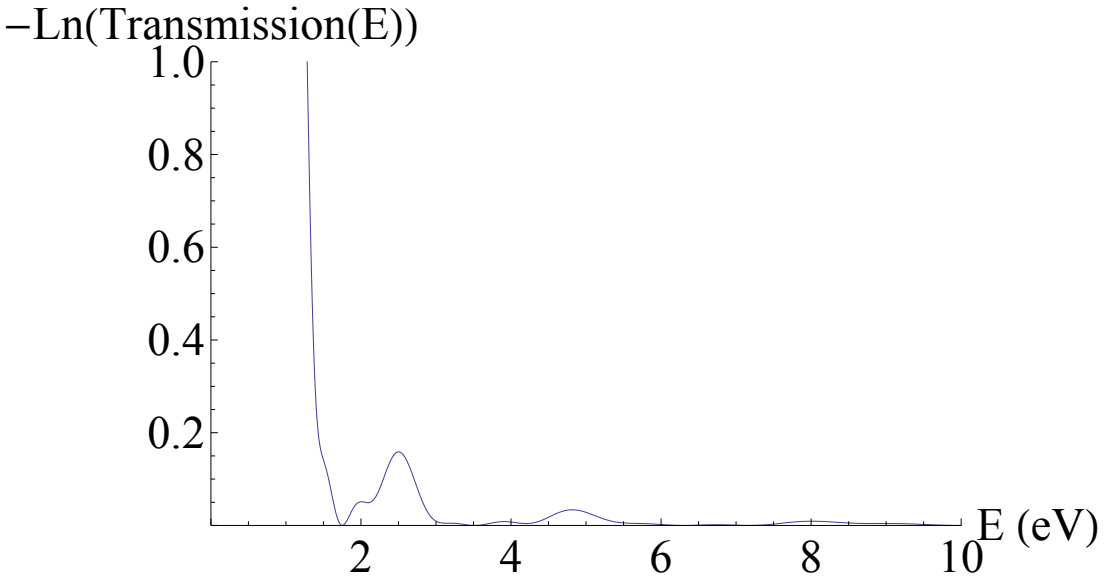
In[29]:=
```
Tp = 1 / (Abs[TC]^2);
```

In[34]:=
```
Quiet[Plot[Tp, {E0, 0, 10}, PlotRange → {{0, 10}, {0, 1}},
  AxesLabel → {"E (eV)", "Transmission(E)"}, LabelStyle → Large]]
Quiet[Plot[-Log[Tp], {E0, 0, 10}, PlotRange → {{0, 10}, {0, 1}},
  AxesLabel → {"E (eV)", "-Ln(Transmission(E))"}, LabelStyle → Large]]
Quiet[ParametricPlot[{Tp, E0}, {E0, 1.14, 10}, PlotRange → {{0, 1.1}, {0, 5}},
  AxesLabel → {"Transmission(E)", "E (eV)"}, LabelStyle → Large]]
Quiet[ParametricPlot[{-Log[Tp], E0}, {E0, 0, 1}, PlotRange → {{0, 20}, {0, 1}},
  AxesLabel → {"-Ln(Transmission(E))", "E (eV)"},
  AspectRatio → 1 / 1, LabelStyle → Large]]
```

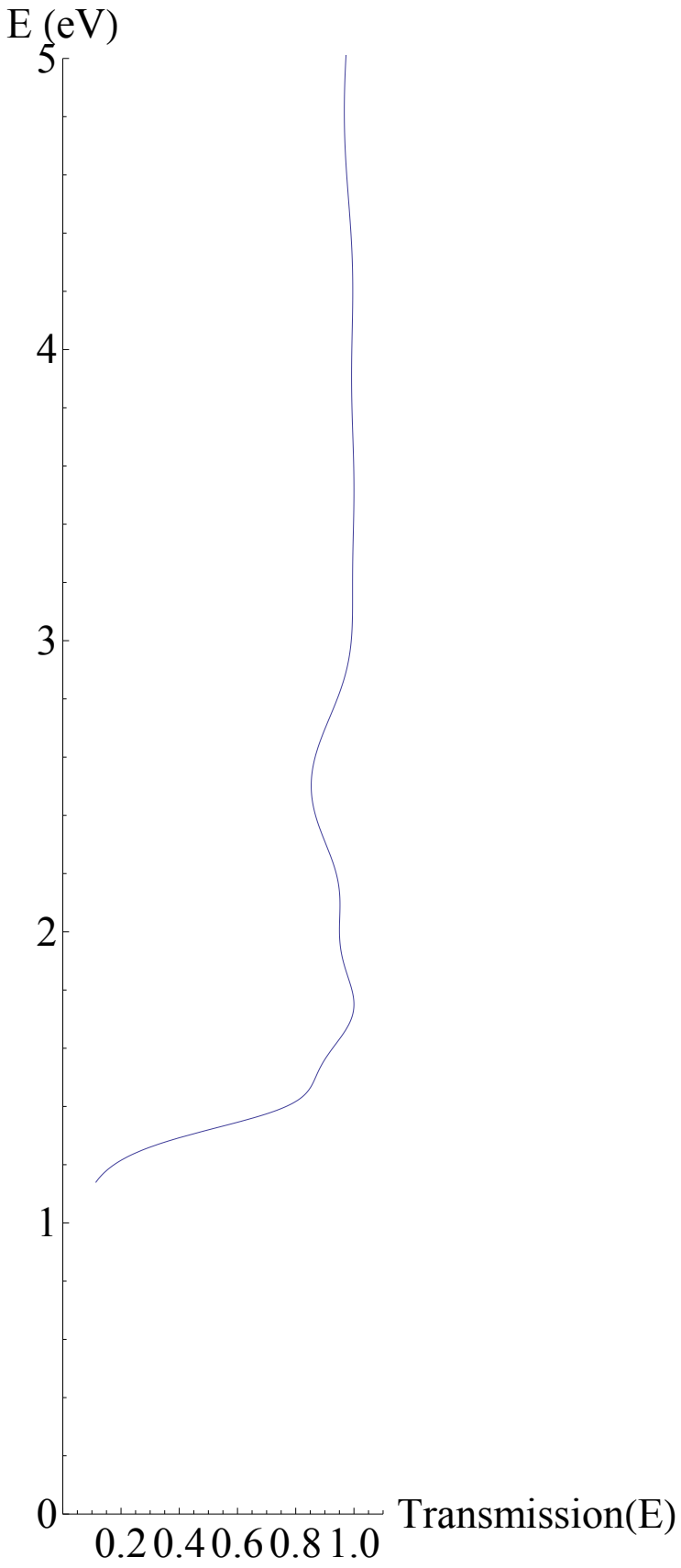
Out[34]=


Transmission(E)
1.0
0.8
0.6
0.4
0.2
0.0
2
4
6
8
10
E (eV)

Out[35]=


−Ln(Transmission(E))
1.0
0.8
0.6
0.4
0.2
2
4
6
8
10
E (eV)

Out[36]=



Out[37]=