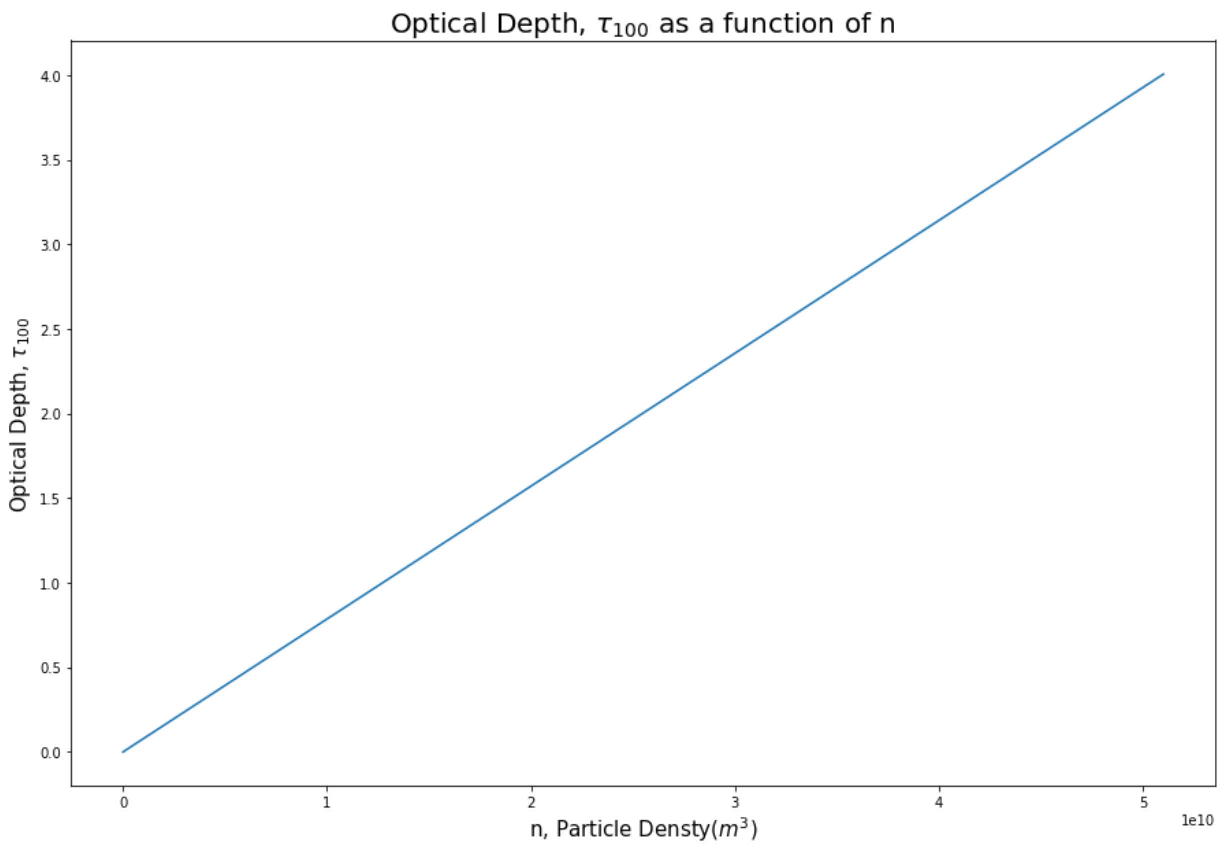
In [1]:
```
import numpy as np
import matplotlib.pyplot as plt
```

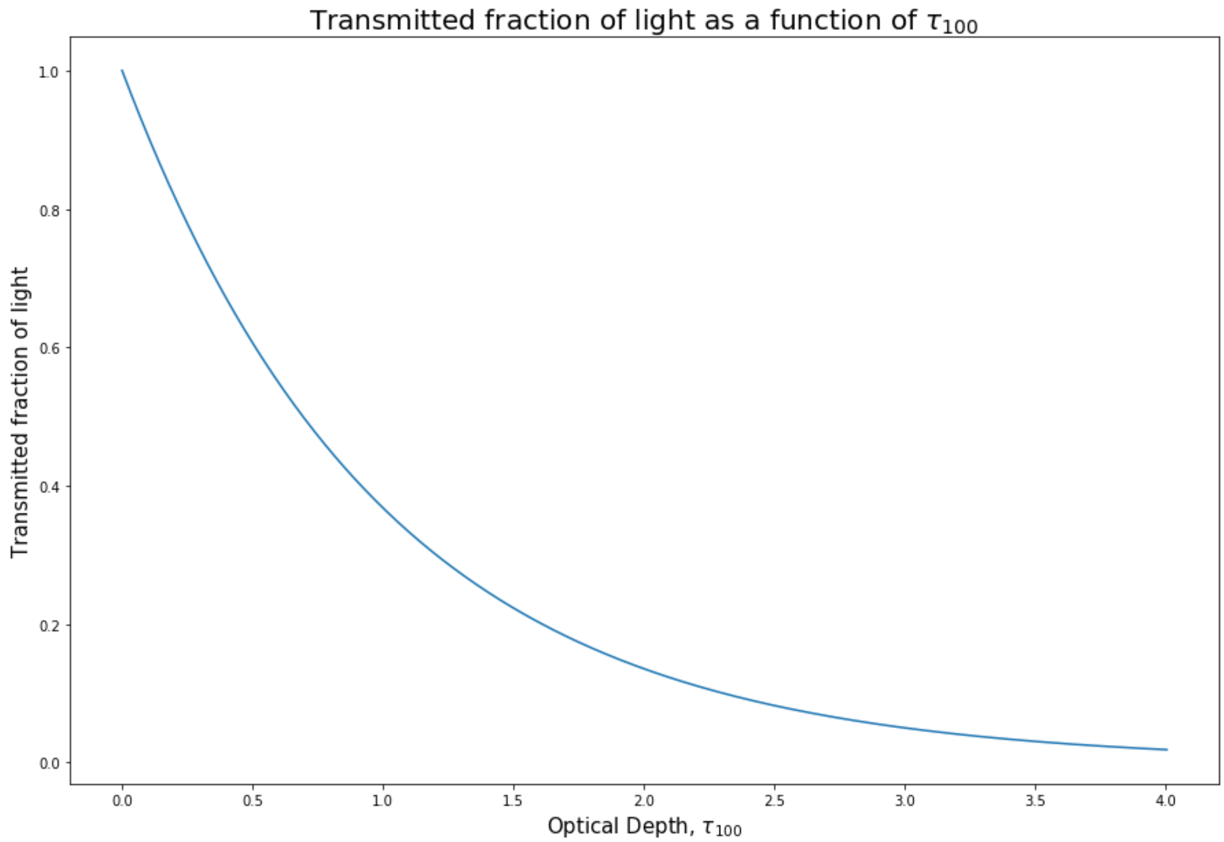
In [34]:
```
plt.figure(figsize=(15,10))
n_s = np.linspace(0,5.1E10,10000)
opDepth = n_s*(np.pi*(0.5E-6)**2)*100
plt.plot(n_s,opDepth)
plt.xlabel(r'n, Particle Densty$(m^3)$', fontsize=15)
plt.ylabel(r'Optical Depth, $\tau_{100}$', fontsize=15)
plt.title(r'Optical Depth, $\tau_{100}$ as a function of n', fontsize=20)
```

Out[34]:
```
Text(0.5, 1.0, 'Optical Depth, $\\tau_{100}$ as a function of n')
```



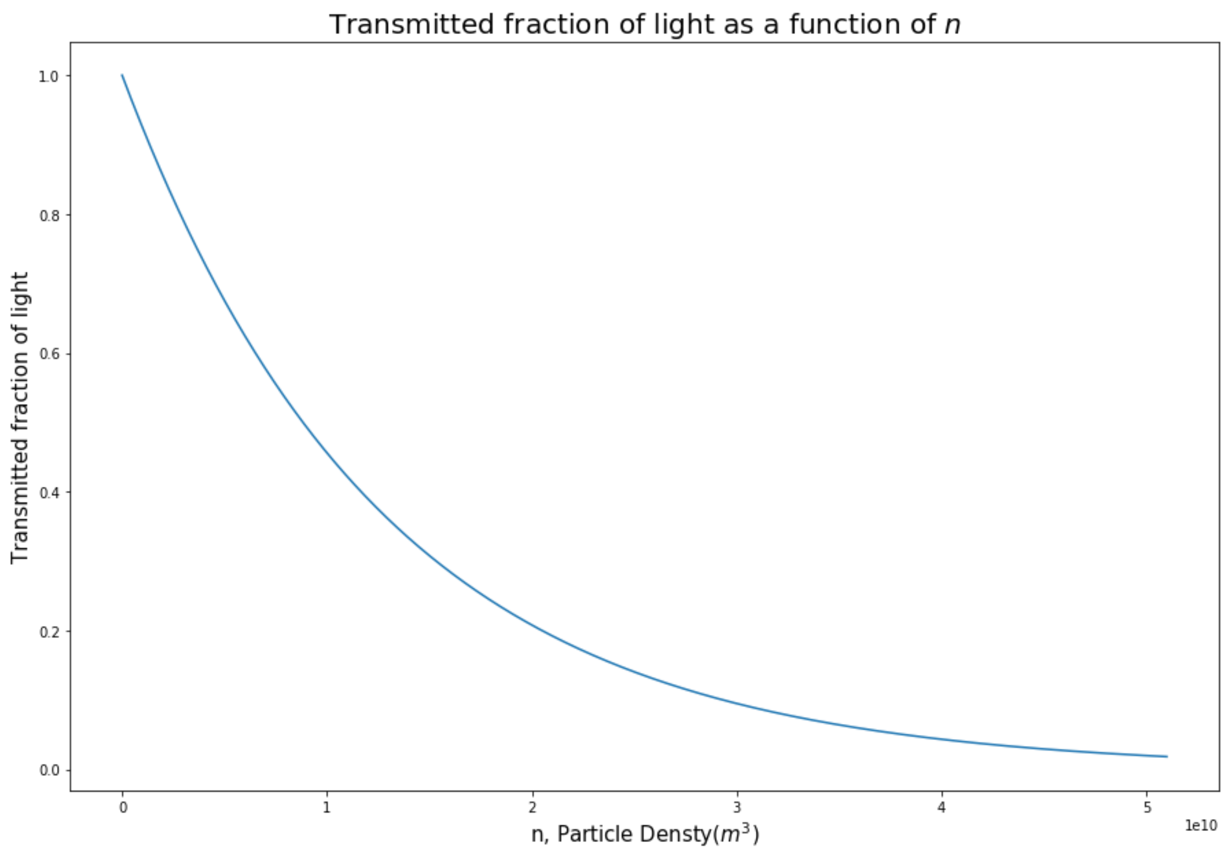
In [35]:
```
plt.figure(figsize=(15,10))
transmitted = np.exp(-1*opDepth)  # Using I = I0*exp(-tau)
plt.plot(opDepth, transmitted)
plt.ylabel('Transmitted fraction of light', fontsize=15)
plt.xlabel(r'Optical Depth, $\tau_{100}$', fontsize=15)
plt.title(r'Transmitted fraction of light as a function of $\tau_{100}$', fontsiz
```

Out[35]:
```
Text(0.5, 1.0, 'Transmitted fraction of light as a function of $\\tau_{100}$')
```



In [36]:
```
plt.figure(figsize=(15,10))
transmitted = np.exp(-1*opDepth)  # Using I = I0*exp(-tau)
plt.plot(n_s, transmitted)
plt.ylabel('Transmitted fraction of light', fontsize=15)
plt.xlabel(r'n, Particle Densty$(m^3)$', fontsize=15)
plt.title(r'Transmitted fraction of light as a function of $n$', fontsize=20)
```

Out[36]:
```
Text(0.5, 1.0, 'Transmitted fraction of light as a function of $n$')
```



In [ ]: