

J37016 Curve Fitting Document

```
In[23]:= << Graphics`Graphics`
```

```
In[24]:= data = Import["C:\Matlab72\work\J37016fit.txt", "TSV"];
```

```
In[25]:= trans = Transpose[data];
```

```
In[26]:= AHL = trans[[1]];
Fluor = trans[[2]];
```

```
In[28]:= AHLFluor = Transpose[{AHL, Fluor}];
```

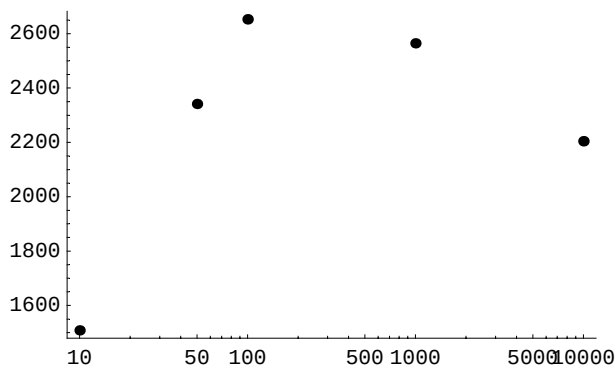
```
In[29]:= TempFluor = Transpose[{Temp, Fluor}];
```

Transpose::nmtx : The first two levels of the one-dimensional list {Temp, {2205.04, <<3>>, 1508.13}} cannot be transposed. More...

```
In[49]:= Pointgraph =
LogLinearListPlot[AHLFluor, PlotStyle -> PointSize[0.02], DisplayFunction -> Identity]
```

```
Out[49]= - Graphics -
```

```
In[53]:= Show[Pointgraph, DisplayFunction -> $DisplayFunction]
```



```
Out[53]= - Graphics -
```

Assumptions:

```
In[31]:= dGFP = 0.015
LuxR = 0.93
```

```
Out[31]= 0.015
```

```
Out[32]= 0.93
```

Best Fit Function

```
In[33]:= Func1[x_] :=  $\frac{1}{dGFP} * \frac{a * LuxR * x}{(LuxR * x) + b}$ 
```

Find Best Fit Curve with Least Squares Method

```
In[34]:= f1 = FindFit[AHLFluor, Func1[x], {a, b}, x]
```

```
Out[34]= {a → 37.8773, b → 5.38318}
```

```
FindFit::fitc : Number of coordinates (2) is not equal to the number of variables (1). More...
```

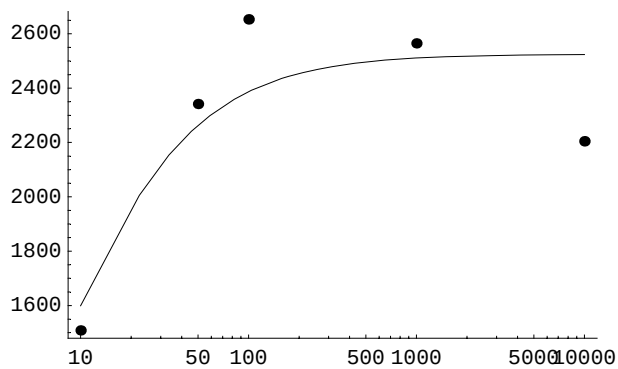
```
FindFit::fitc : Number of coordinates (2) is not equal to the number of variables (1). More...
```

```
In[50]:= BestCurve = LogLinearPlot[Func1[x] /. f1,
    {x, 10, 10000}, PlotRange → {1500, 2600}, DisplayFunction → Identity]
```

```
Out[50]= - Graphics -
```

Plot Graph with Points:

```
In[52]:= Show[{Pointgraph, BestCurve}, DisplayFunction → $DisplayFunction]
```



```
Out[52]= - Graphics -
```