J37016 Curve Fitting Document for 27th August Results, considering only points from [AHL] 10 to 10000.

In[204]:=
```
<< Graphics`Graphics`
```

In[205]:=
```
data = Import["C:\Matlab72\work\J37016fita.txt", "TSV"];
```

In[206]:=
```
trans = Transpose[data];
```

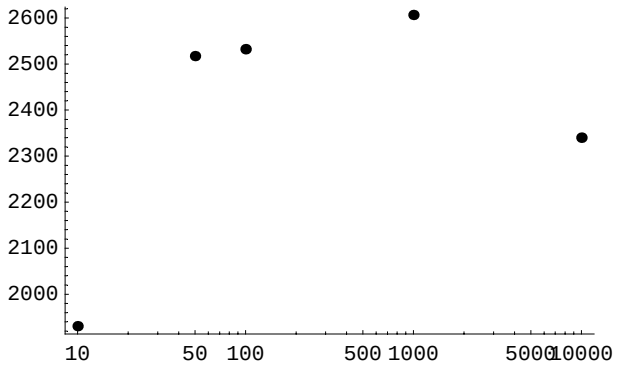
In[207]:=
```
AHL = trans[[1]];
Fluor = trans[[2]];
```

In[209]:=
```
AHLFluor = Transpose[{AHL, Fluor}];
```

In[210]:=
```
Pointgraph =
 LogLinearListPlot[AHLFluor, PlotStyle → PointSize[0.02], DisplayFunction → Identity]
```

Out[210]=
```
- Graphics -
```

In[211]:=
```
Show[Pointgraph, DisplayFunction → $DisplayFunction]
```



Out[211]=
```
- Graphics -
```

Assumptions:

In[212]:=
```
dGFP = 0.015
dLuxR = 0.0115
```

Out[212]=
```
0.015
```

Out[213]=
```
0.0115
```

In[214]:=

$$z = \frac{dGFP}{dLuxR}$$

Out[214]=

1.30435

Best Fit Function

In[215]:=

$$Func1[x\_] := \frac{a}{dGFP} - \frac{b}{x * z}$$

Find Best Fit Curve with Least Squares Method

In[216]:=

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

Out[216]=

{a → 38.0742, b → 7601.03}

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[217]:=

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

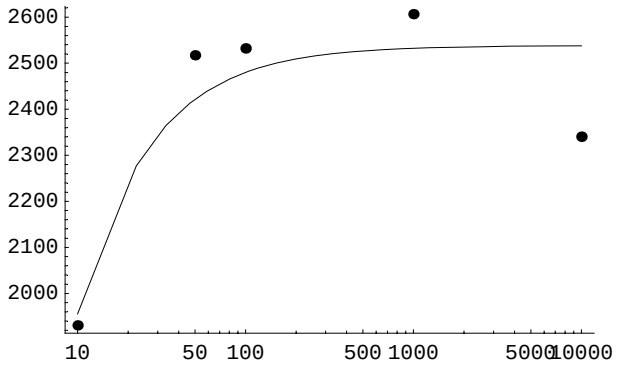
Out[217]=

- Graphics -

Plot Graph with Points:

In[218]:=

```
Show[{Pointgraph, BestCurve}, DisplayFunction → $DisplayFunction]
```



Out[218]=

- Graphics -

In[219]:=

```
BestPts = Func1[AHL] /. f1
```

Out[219]=

```
{2537.7, 2532.46, 2480.01, 2421.73, 1955.54}
```

In[220]:=

```
sqDiff = (Fluor - BestPts)^2
```

Out[220]=

```
{38955.2, 5523.44, 2773.79, 9071.74, 618.101}
```

In[221]:=

```
Total[sqDiff]
```

Out[221]=

```
56942.3
```