

```
In[43]:= opticalParticleTable= Import [
    "/home /david/Desktop/Spring 2016/ASM-GT Data Challenge_Data/Al6061-Optical
    Images /Al 6061
    - Particle Information/*.csv"];
opticalParticleTable= DeleteDuplicates@Flatten[opticalParticleTable 1];
$HistoryLength= 0;
```

```
Table[
{
i,
N@Interpolation[{{Log@#[[1]], 400}, {Log@#[[2]], 650}},
    Log@#[[3]], InterpolationOrder→1] &@
    Table[
        Count[ $\frac{\#}{\text{Min}[\#]}$ , _? (#≤i&)] &@Select[opticalParticleTable
            StringCount#[[2]], magnification] == 1\StringCount#[[2]], "50x"] == 1 &] [[
            ;; , 3]], {magnification, {"400", "650", "Unknown"}}]],
{i,
    50}]
```

```
Out[77]= {{1, 493.826}, {2, 493.826}, {3, 471.68}, {4, 486.238}, {5, 495.647},
{6, 480.601}, {7, 488.407}, {8, 500.866}, {9, 508.902}, {10, 511.302},
{11, 514.3}, {12, 513.852}, {13, 512.96}, {14, 510.298}, {15, 509.864},
{16, 510.975}, {17, 514.187}, {18, 517.795}, {19, 519.301}, {20, 517.426},
{21, 517.461}, {22, 518.018}, {23, 518.656}, {24, 519.369}, {25, 519.673},
{26, 519.156}, {27, 520.365}, {28, 521.003}, {29, 520.825}, {30, 519.253},
{31, 517.017}, {32, 517.017}, {33, 518.908}, {34, 518.819}, {35, 517.046},
{36, 517.407}, {37, 515.834}, {38, 515.075}, {39, 516.234}, {40, 516.062},
{41, 517.283}, {42, 516.798}, {43, 516.625}, {44, 516.625}, {45, 515.456},
{46, 514.565}, {47, 513.942}, {48, 514.466}, {49, 514.713}, {50, 514.282}}
```

```

In[83]:= ListPlot[
  {{1, 493.82603161970667}, {2, 493.82603161970667},
   {3, 471.67989346983904}, {4, 486.23817818880786}, {5, 495.6470376581058},
   {6, 480.601170437737}, {7, 488.4073548638182}, {8, 500.8658712088408},
   {9, 508.9019087551898}, {10, 511.30162655867184}, {11, 514.2995757066225},
   {12, 513.8516619268781}, {13, 512.9600406590063}, {14, 510.2979440170603},
   {15, 509.8636666469794}, {16, 510.9753923242527}, {17, 514.1874776800519},
   {18, 517.7946374201094}, {19, 519.3007642167876}, {20, 517.4258824351193},
   {21, 517.4606225665723}, {22, 518.0182695419617}, {23, 518.6563249573634},
   {24, 519.3689483698001}, {25, 519.6729219908427}, {26, 519.1561370466816},
   {27, 520.3645384581757}, {28, 521.0033734045312}, {29, 520.8254609928994},
   {30, 519.2526728952057}, {31, 517.0169699919236}, {32, 517.0167235998354},
   {33, 518.9077630299766}, {34, 518.8193219065863}, {35, 517.0464499983974},
   {36, 517.4073238767326}, {37, 515.8343734344676}, {38, 515.0752871001098},
   {39, 516.2339382733838}, {40, 516.0617169664318}, {41, 517.2828194134217},
   {42, 516.7979129852067}, {43, 516.6251080810595}, {44, 516.6251080810595},
   {45, 515.4563893451111}, {46, 514.5651661764821}, {47, 513.9417540899062},
   {48, 514.4658108780226}, {49, 514.7129209256394}, {50, 514.2822414398443}},
  PlotLabel -> "Temperature Estimate vs. Particle Size",
  AxesLabel -> {"Particle Size (pixel2)", "Temperature (°F)"}]

```

