**Supplement 2:**   **Two unknown UV-VIS analysis Example**

 *Chem 6614 Chemical Instrumentation*

**Sample two unknown calibration and unknown data**

|  |  |  |
| --- | --- | --- |
| C(Cu) | A(803) | A(393) |
| 0.01 | 0.071 | 0.003 |
| 0.02 | 0.151 | 0.005 |
| 0.03 | 0.207 | 0.007 |
| 0.04 | 0.283 | 0.003 |
| 0.05 | 0.345 | 0.002 |
|  |  |  |
| C(Ni) | A(803) | A(393) |
| 0.01 | 0.0096 | 0.053 |
| 0.02 | 0.0198 | 0.1 |
| 0.03 | 0.0291 | 0.147 |
| 0.04 | 0.0388 | 0.21 |
| 0.05 | 0.049 | 0.246 |
|  | A(803) | A(393) |
| unk | 0.235 | 0.125 |

To find unknown C(Ni) and C(Cu):

1. Fit each of the four sets of calibration A vs C via linear regression for m and b.
2. Copy m(Cu) and b(Cu) for 803 and 393 into indicated boxes in 2 eq-/2 unknown EXCEL routine
3. Copy m(Ni) and b(Ni) for 803 and 393 into indicated boxes in 2 eq/2unknown EXCEL routine.
4. Copy Aunkn(803) and Aunkn(393) into indicated boxes in 2 eq/2 unknown EXCEL routine

The routine should automatically provide C(Cu) and C(Ni) for unknown mixture in last two columns