```
% Constant
e = 1.6 * 10^-19;
```

```
% Pre-defined var
precut_start = 1;
precut_end = 9;

aftercut_start = 9;
aftercut_end = 29;

before_x_start = -1.7;
x_interval = 0.005;
before_x_end = 0.0;
after_x_start = -1.7;
after_x_end = 4.0;

label_x_pos = 3
```

```
label_x_pos =
     3
```

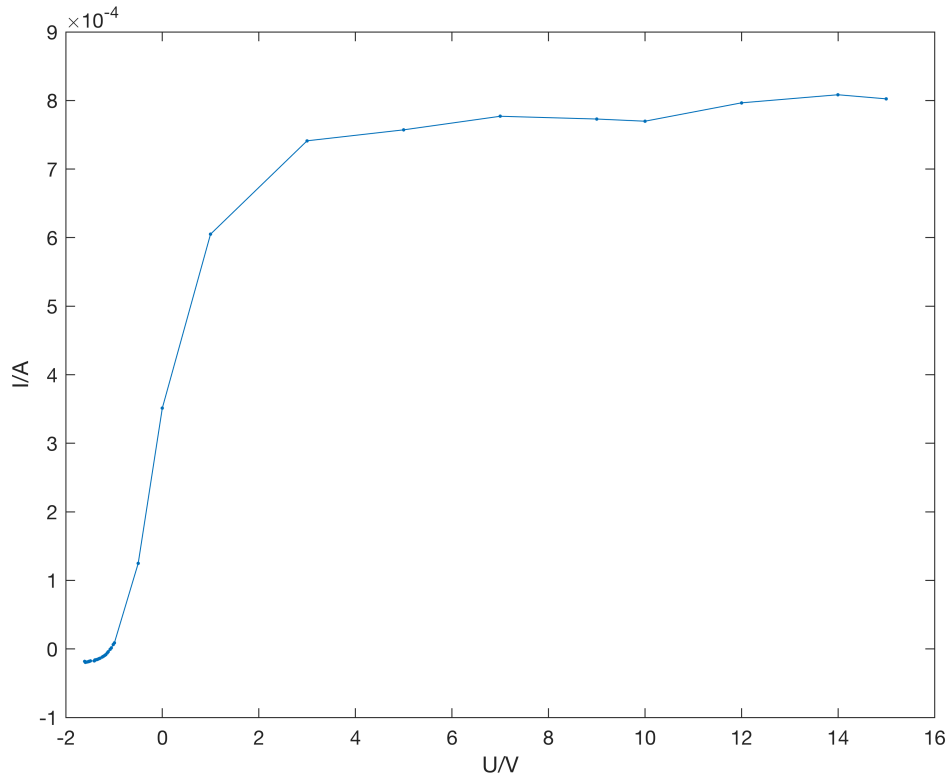
```
label_y_pos = -2.2*10^-4
```

```
label_y_pos =
                -0.00022
```

```
% Data saved here
lamda = 405;
U = [-1.6080 -1.5967 -1.5722 -1.5454 -1.5211 -1.5099 -1.4917 -1.4089 -1.4075 -1.3940 -1
    -1.3478 -1.3163 -1.2895 -1.2467 -1.2191 -1.1920 -1.1729 -1.1423 -1.1210 -1.0821 -1
    -1.0155 -0.9934 -0.5 0 0.9985 2.9984 4.9987 6.9994 8.9994 9.9992 11.9989 13.9994 14
V = [-0.91 -0.97 -0.96 -0.95 -0.90 -0.90 -0.87 -0.88 -0.85 -0.81 -0.79 -0.77 -0.72 -0.6
    -0.54 -0.47 -0.41 -0.29 -0.21 -0.04 0.08 0.32 0.44 6.24 17.57 30.25 37.06 37.86 38
    38.49 39.83 40.42 40.12];

% Check if match and calculate A
if(size(U) == size(V))
    A = V .* 10^-3 .* 200 .* 10^-4;
else
    size(U)
    size(V)
    error("U V not match");
end
```

```
% Lets plot the first picture
figure;
```

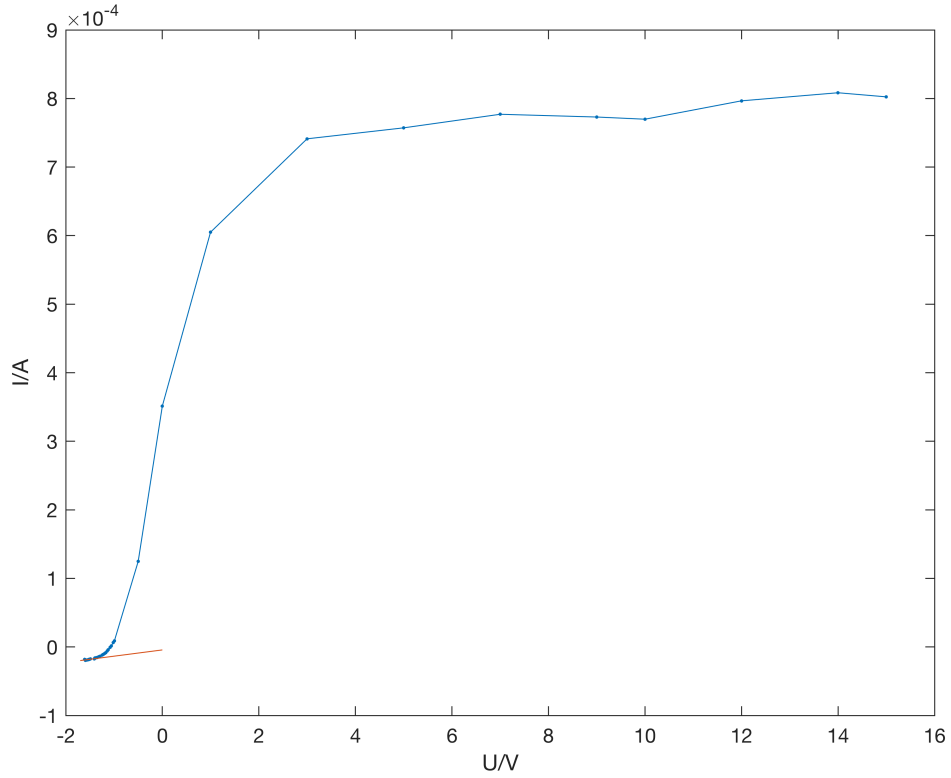
```
plot(U, A, '.-');
axis on
hold on
xlabel('U/V')
ylabel('I/A')

% Create textbox
text(label_x_pos, label_y_pos, '405nm光下光电管的伏安特性曲线', 'FontWeight','bold', 'FontS
```



405nm光下光电管的伏安特性曲线

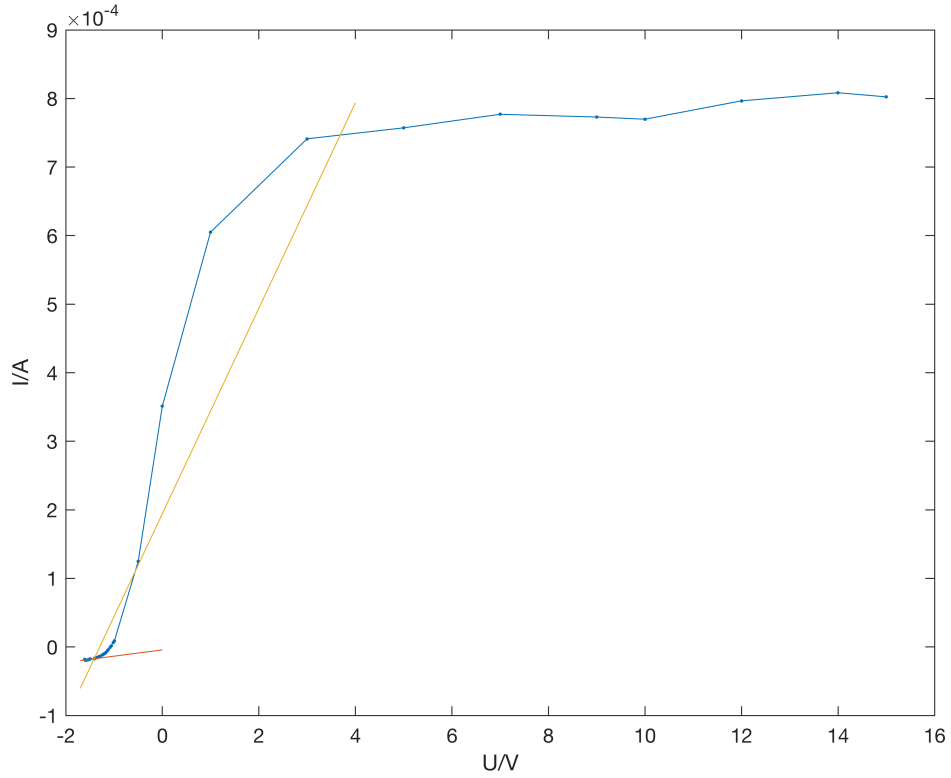
```
% Make a slice
U_Before = U(precut_start:precut_end)';
A_Before = A(precut_start:precut_end)';

U_After = U(aftercut_start:aftercut_end)';
A_After = A(aftercut_start:aftercut_end)';
```

```
% Fit before
ftp = fittype('poly1');
fittedPic = fit(U_Before, A_Before, ftp);
fitx_before = before_x_start:x_interval:before_x_end;
fity_before = fittedPic(fitx_before);
plot(fitx_before, fity_before );
```



405nm光下光电管的伏安特性曲线

```
% Fit After
fittedPicA = fit(U_After, A_After, ftp);
fitx_After = after_x_start:x_interval:after_x_end;
fity_After = fittedPicA(fitx_After);
oic = plot(fitx_After, fity_After);
```



405nm光下光电管的伏安特性曲线

```
% Solve the points
syms x
eq = (fittedPic.p1 - fittedPicA.p1)*x + fittedPic.p2 - fittedPicA.p2 == 0;
px = solve(eq, x);
px = eval(px)
```

```
px =

        -1.41226642732042
```