

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

```
% Pre-defined var
precut_start = 1;
precut_end = 3;

aftercut_start = 8;
aftercut_end = 25;

before_x_start = -0.7;
x_interval = 0.005;
before_x_end = 0.0;
after_x_start = -0.7;
after_x_end = 1.0;

label_x_pos = 3
```

```
label_x_pos =
    3
```

```
label_y_pos = -1.8*10^-4
```

```
label_y_pos =
    -0.00018
```

```
str = '577nm'
```

```
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'577nm'
```

```
% Data saved here
lamda = 577;
U = [-0.7 -0.6875 -0.6715 -0.6200 -0.6075 -0.5976 -0.5901 -0.5815 ...
    -0.5750 -0.5718 -0.5695 -0.5667 -0.5559 -0.5471 -0.5431 -0.5311 ...
    -0.5100 -0.4884 -0.4484 -0.3987 -0.3562 -0.2986 -0.2487 -0.1488 ...
    -0.0487 0.0026 0 0.5 0.9984 1.9983 2.9982 3.9984 4.9985 5.9986 ...
    6.9991 7.9989 8.9989 11.9985 13.9989 15];
V = [-0.31 -0.30 -0.27 -0.19 -0.14 -0.11 -0.08 -0.04 -0.01 0 0 0.02 0.09 0.14 ...
    0.17 0.27 0.45 0.69 1.24 2.08 2.87 4.18 5.41 7.61 9.94 10.87 10.87 18.08 23.00 ...
    25.43 26.80 27.95 28.40 28.80 28.81 28.60 28.22 28.64 29.60 28.94];

% 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

```

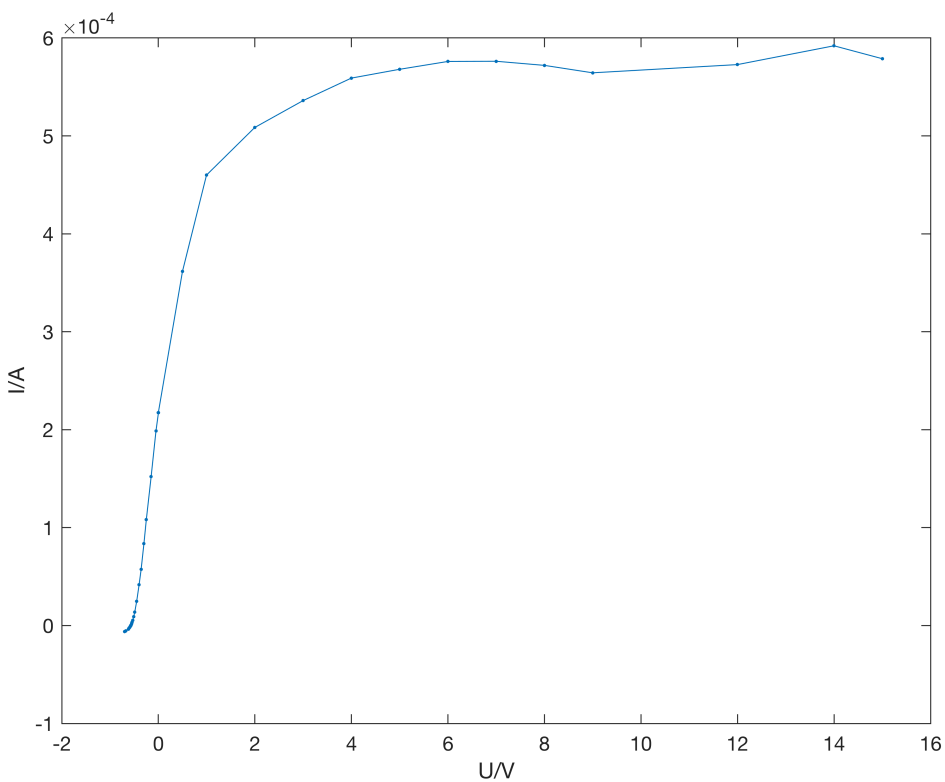
```

% 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, [str,'光下光电管的伏安特性曲线'], 'FontWeight','bold', 'FontS

```



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```

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

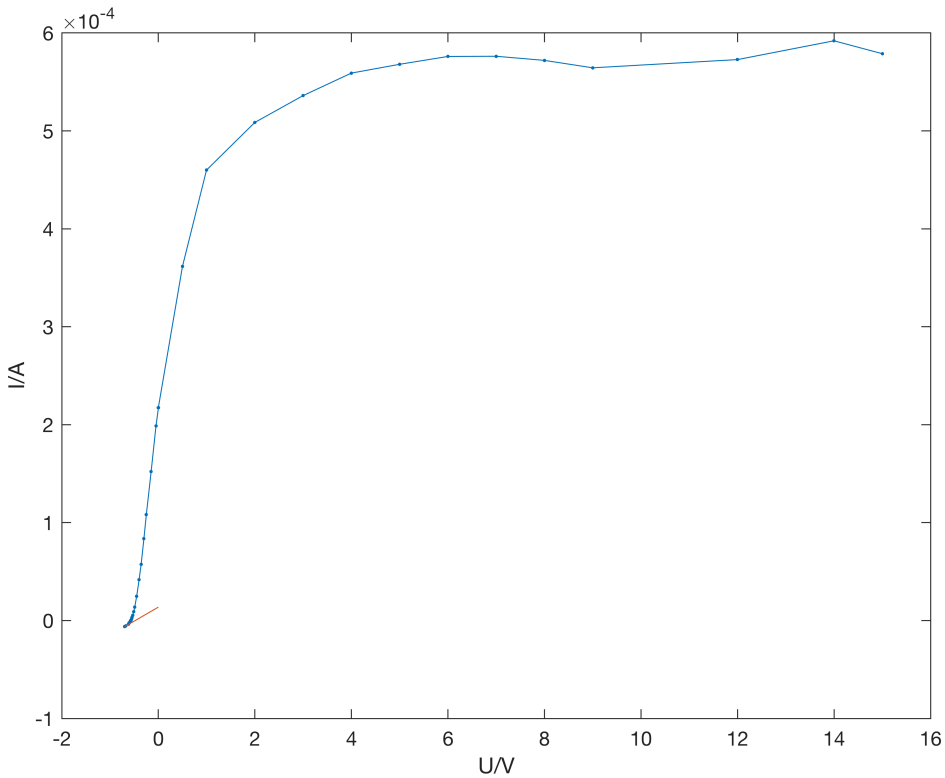
U_After = U(aftercut_start:aftercut_end)';
A_After = A(aftercut_start:aftercut_end)';

```

```

% 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 );

```

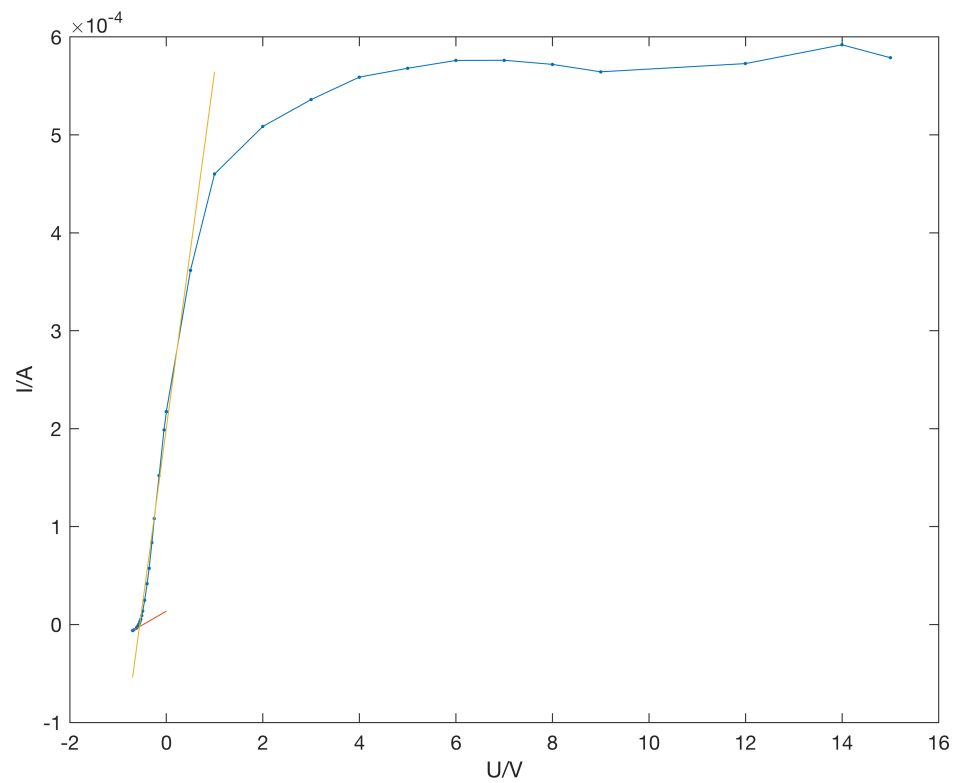


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```

% 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);

```



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

```
Ua =
-0.556978879736719
```