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

```matlab
% Pre-defined var
precut_start = 1;
precut_end = 10;

aftercut_start = 11;
aftercut_end = 35;

before_x_start = -2.0;
x_interval = 0.005;
before_x_end = 0.0;
after_x_start = -2.0;
after_x_end = 4.0;

label_x_pos = 3;
label_y_pos = -4.2*10^-4;

str = '365nm';
```

```matlab
% Data saved here
lamda = 365;
U = [-1.9985 -1.9615 -1.9494 -1.9091 -1.8910 -1.8676 -1.8346 -1.8133 -1.7606 -1.7422 -1
    -1.6818 -1.6667 -1.6370 -1.6251 -1.6111 -1.5985 -1.5738 -1.5582 -1.5428 -1.5262 -1
    -1.4237 -1.1985 -0.9984 -0.4981 0.0073 0.4981 0.9984 1.4982 1.9984 2.9983 3.9986 4
    6.9993 7.9992 9.9991 11.9988 13.9993 15];
V = [-2.06 -2.02 -2.02 -1.99 -2.00 -2.00 -1.94 -1.93 -1.92 -1.89 -1.83 -1.78 -1.74 -1.
    -1.52 -1.44 -1.34 -1.25 -1.15 -0.88 -0.60 1.60 4.26 14.94 32.84 48.92 58.60 64.98
    84.40 84.50 84.45 88.23 89.91 89.22 88.21];

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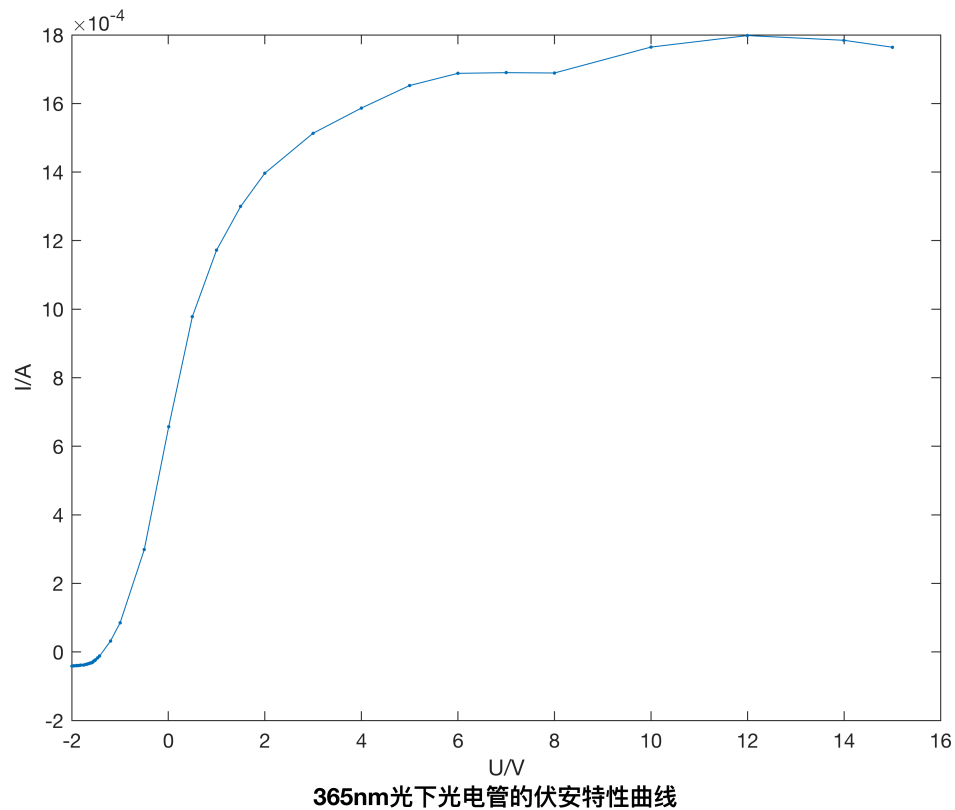
```matlab
% Lets plot the first picture
figure;

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

1

```matlab
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
```


365nm光下光电管的伏安特性曲线

```matlab
% 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)';
```
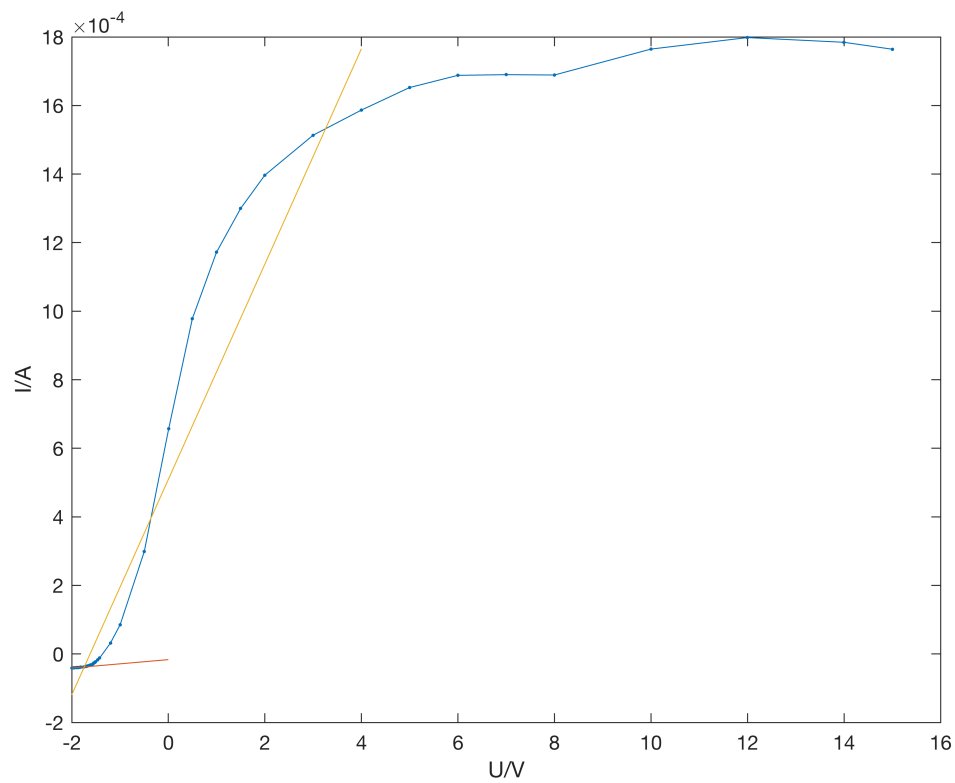
```matlab
% Fit before
ftp = fittype('poly1');
fittedPic = fit(U_Before, A_Before, ftp);
fitx_before = before_x_start:x_interval:before_x_end;
fity_before = fittedPic(fitx_before);
plot(fitx_before, fity_before );
```
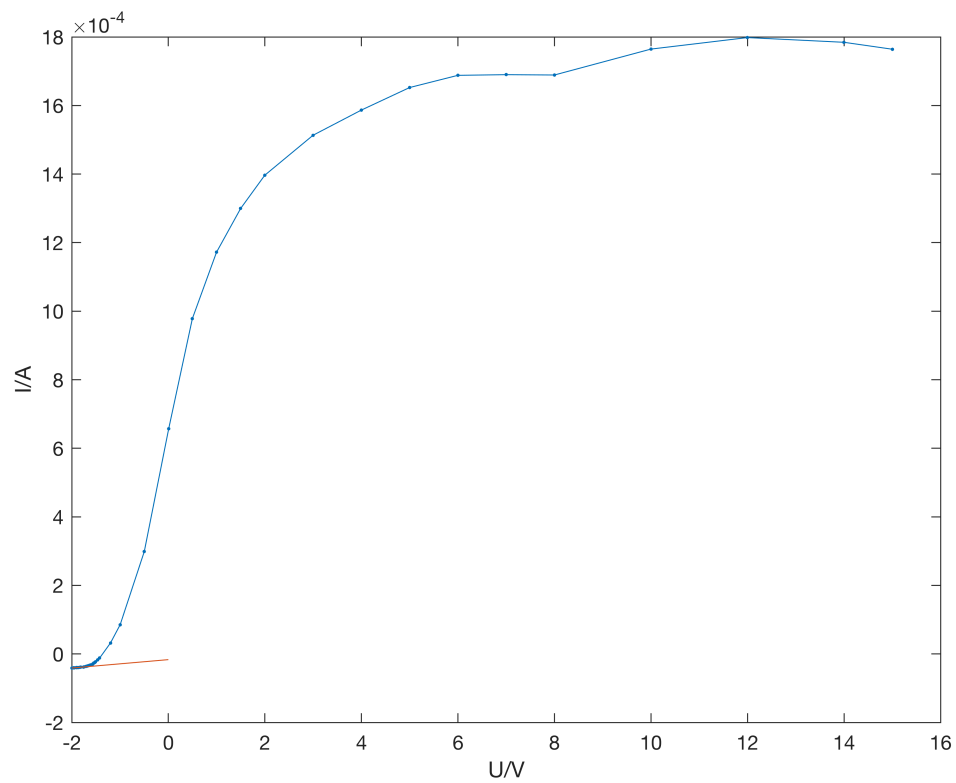
365nm光下光电管的伏安特性曲线

```
% 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);
```

365nm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);
Ua = eval(px)

Ua =

     -1.74192140815199
```