[**DOING PHYSICS WITH MATLAB**](http://www.physics.usyd.edu.au/teach_res/mp/mphome.htm)

**VISIBLE SPECTRUM**

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[**DOWNLOAD DIRECTORY FOR MATLAB SCRIPTS**](http://www.physics.usyd.edu.au/teach_res/mp/mscripts)

Download and inspect the scripts and make sure you can follow the structure of the programs.

**wm\_spectrum.m**

Color plot of the visible spectrum for the wavelength range from 380 nm to 780 nm.

Calls the function **ColorCode.m**

**Colorcode.m**

Function to give the RGB values for a given wavelength color.

Is it assumed the supplied lambda is within the range 380-780 nm.

Smaller or higher values are set notionally to the extreme values.

The script **wm\_spectrum.m** can be used to produce a plot of the visible spectrum for the wavelength range from 380 nm to 780 nm. The script uses the **area** plot function to give the spectrum. The color for each wavelength is calculated from the function **ColorCode.m**.

clear

close all

clc

figure(1)

pos = [0.1 0.1 0.3 0.2];

set(gcf,'Units','normalized');

set(gcf,'Position',pos);

set(gcf,'color','w');

N = 512;

xP = linspace(380,780,N);

yP = ones(1,length(xP));

hold on

thisColorMap = hsv(512);

for cx = 1:N-1

wL = xP(cx)\*1e-9;

thisColor = ColorCode(wL);

h\_area = area(xP(cx:cx+1),yP(cx:cx+1));

set(h\_area,'FaceColor',thisColor);

set(h\_area,'EdgeColor',thisColor);

set(gca,'xLim',[380 770]);

end

xlabel('wavelength \lambda [ nm ] ','fontsize',14);

set(gca,'fontsize',14);

set(gca,'yTick',[]);

The plot of for the visible spectrum is shown below.

