

Sustainable Development Goals in Education

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The "reverse" photoelectric effect

and other useful, low cost and interesting experiments with LEDs.

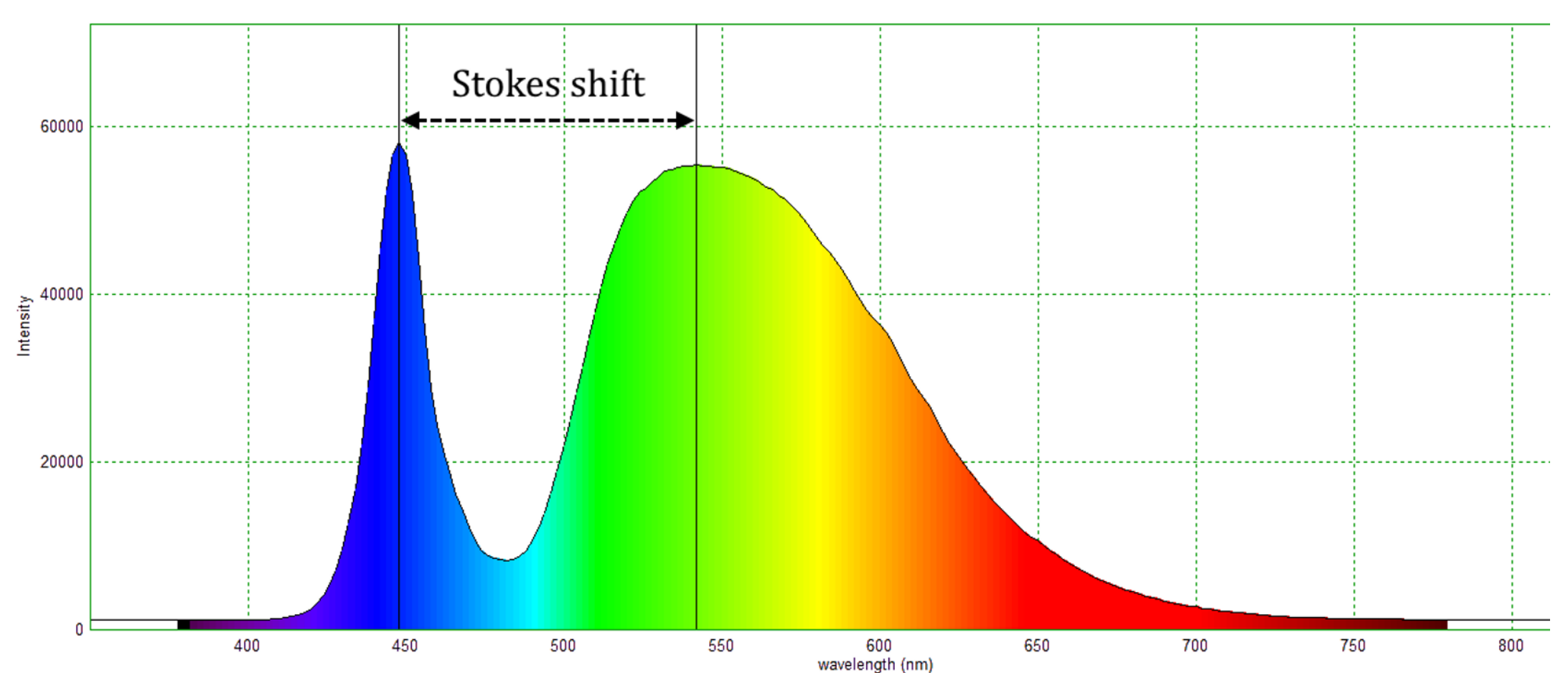
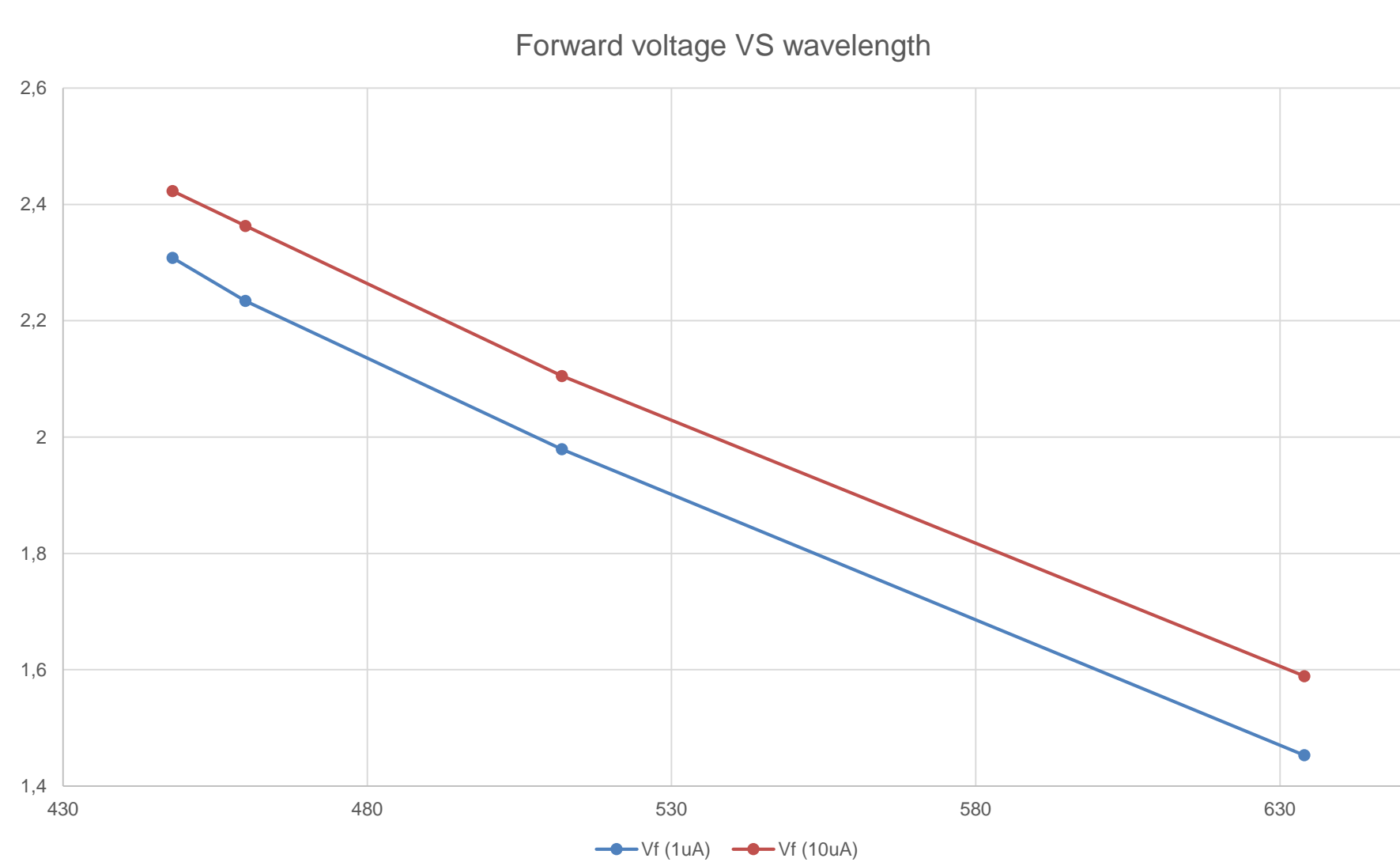
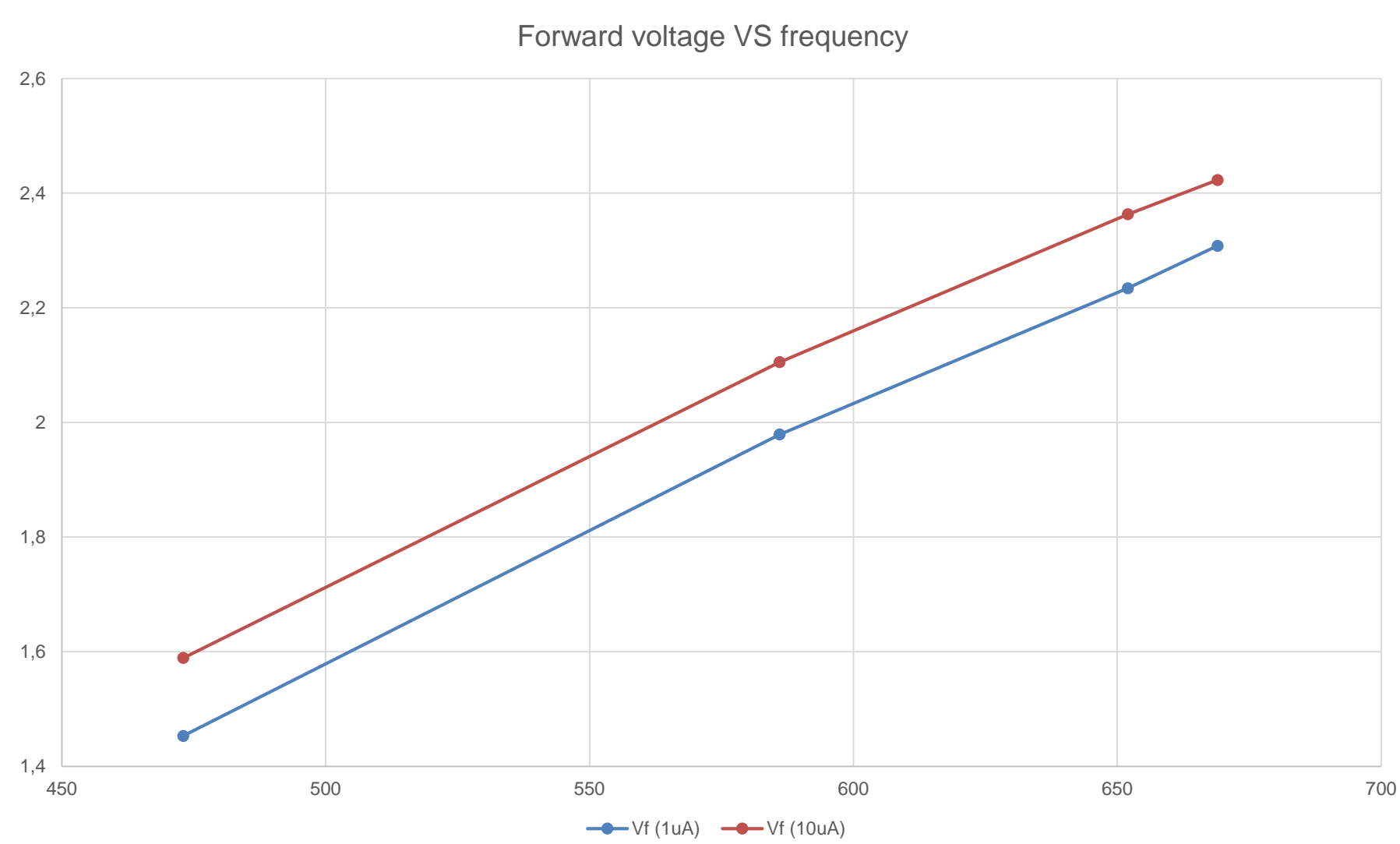
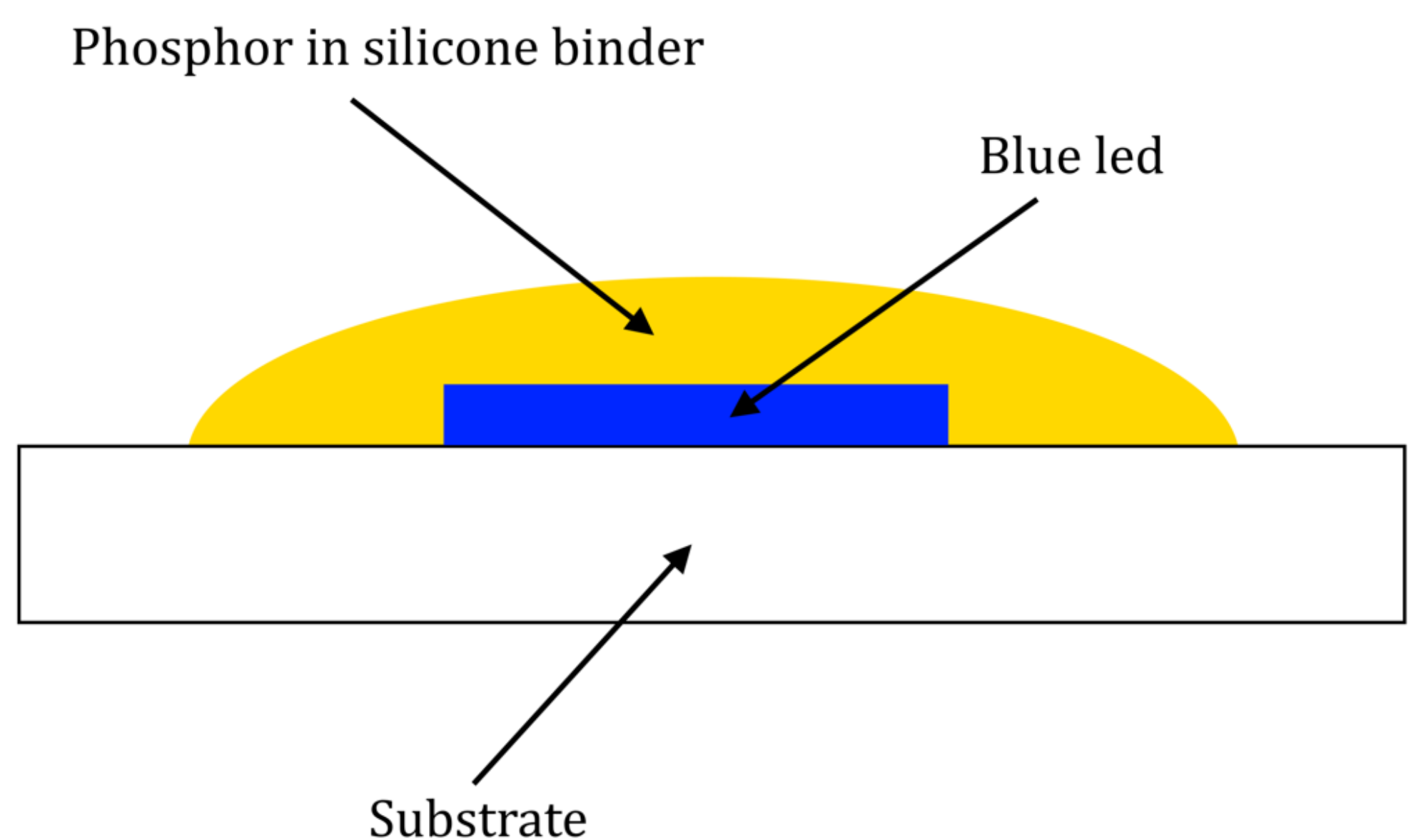
- Show the relationship between the color of a LED and the forward voltage
- Calculation of Planck's constant
- Show why the inventors of the blue LED received the Nobel Price
- Demonstrations of the photoelectric effect using LEDs

Forward voltages of different color LEDs

The forward voltage is the voltage across the LED when it starts to conduct and emit light.

Color	E10-LED	λ (nm)	V_f (1 μ A)	V (10 μ A)	f (THz)
Red		634	1.453	1.589	473
Green		512	1.979	2.105	586
Blue		460	2.234	2.363	652
White		448	2.308	2.423	669

THE NOBEL PRIZE IN PHYSICS 2014



Spectrum of white LED light