

Licht machen



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Licht machen



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Licht machen

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Licht

Erstes Buch Moses (Genesis), Kapitel 1

- 1 Am Anfang schuf Gott Himmel und Erde.
- 2 Und die Erde war wüst und leer, und es war finster auf der Tiefe; und der Geist Gottes schwebte auf dem Wasser.
- 3 Und Gott sprach: Es werde Licht! Und es ward Licht.
- 4 Und Gott sah, dass das Licht gut war. Da schied Gott das Licht von der Finsternis
- 5 und nannte das Licht Tag und die Finsternis Nacht. Da ward aus Abend und Morgen der erste Tag.

Wärmestrahlung

Temperatur:

2500°C

5000°C

7500°C

Sichtbare Farbe:

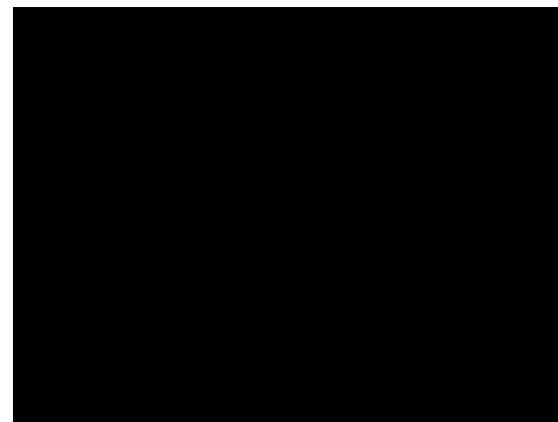
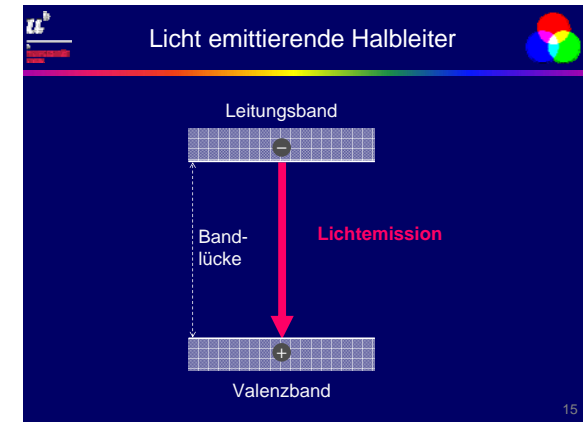
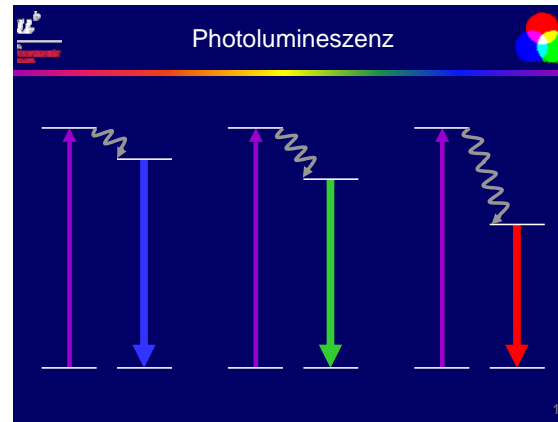
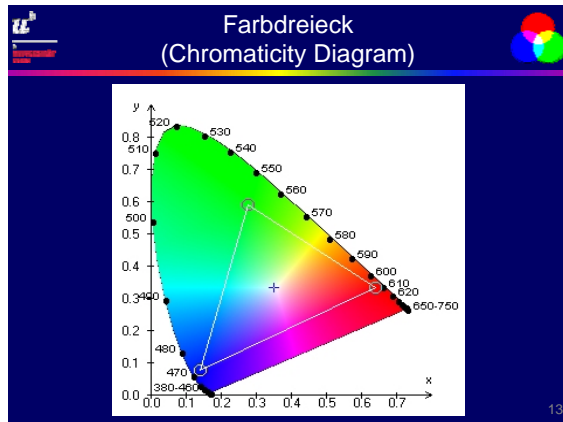
Photorezeptoren im menschlichen Auge

Glühlampe

2500°C

Zerlegung von weissem Licht

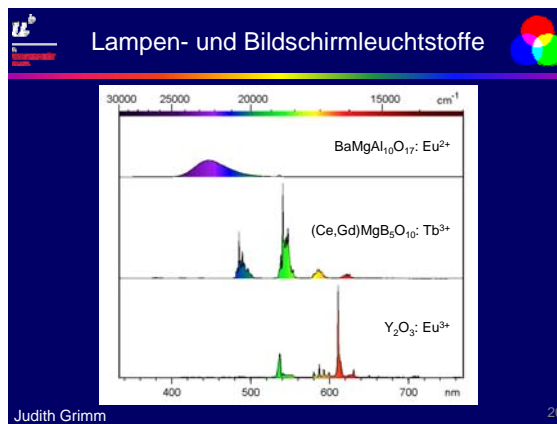
Licht machen: Additive Farbmischung



Leuchtstoffe

Diagram illustrating the energy levels and transitions for phosphors. Three sets of energy levels are shown, each with an upward arrow (excitation) and a downward arrow (emission). The first set is purple, the second is green, and the third is red. Wavy arrows indicate the emission of light.

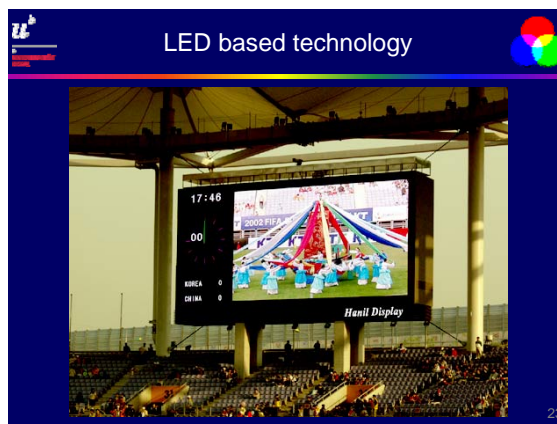
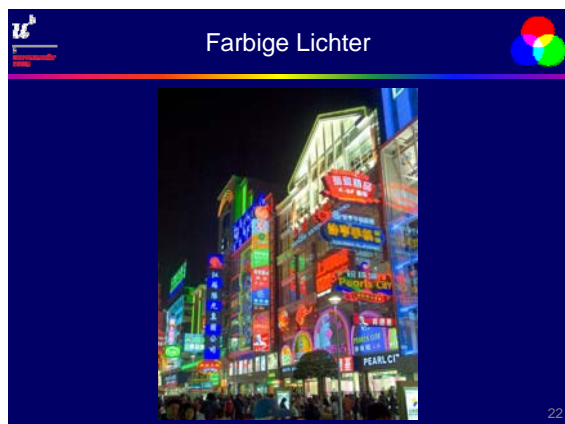
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Die Lanthaniden

A 3D periodic table highlighting the lanthanide series (Lanthaniden) in blue. The elements shown are: H, He, Li, Be, B, C, N, O, F, Ne, Na, Mg, Al, Si, P, S, Cl, Ar, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Br, Kr, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Xe, Cs, Ba, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Fr, Ra, Ac.

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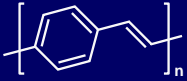





Licht emittierende Halbleiter-Dioden (LED)

Diagram illustrating the structure and energy band diagram of a light-emitting diode (LED). The structure shows a diode with a transparent plastic case and terminal pins. The energy band diagram shows the conduction band (Leitungsband) and valence band (Valenzband) separated by a band gap (Band-lücke). The transition across the band gap is labeled "Lichtemission Elektrolumineszenz".

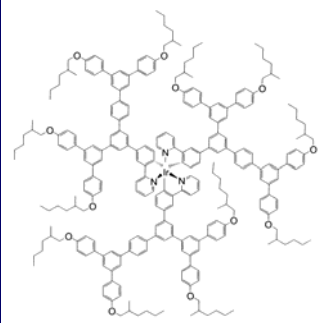
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LED Materialien

Anorganische	Organische (OLED)
III – V Halbleiter Al, Ga, In N, P, As, Sb	Polymere lumineszierende Moleküle mit konjugiertem Elektronensystem
Al Ga As 	 <p>Polyphenylvinylene</p>
Al Ga In P 	
Al Ga P 	
Ga N 	


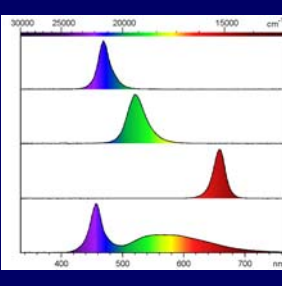
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Licht emittierende Polymere



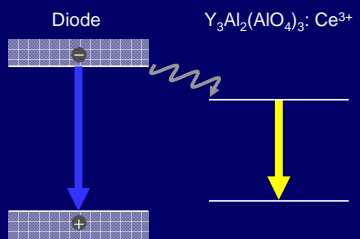
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Diodenspektren

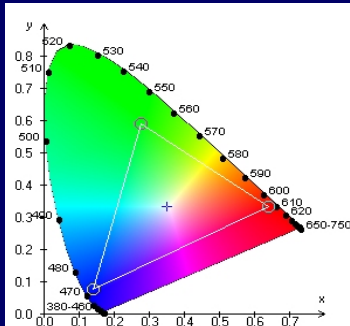
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Weisse Diodenlampe



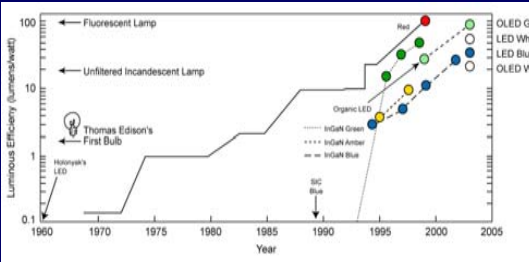
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Farbdreieck (Chromaticity Diagram)



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Energie-Effizienz von Lichtquellen



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Technologie-Schritte

Elektronik

Röhre
analog

Mikro-Elektronik
digital
Festkörper

Lichtquellen

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