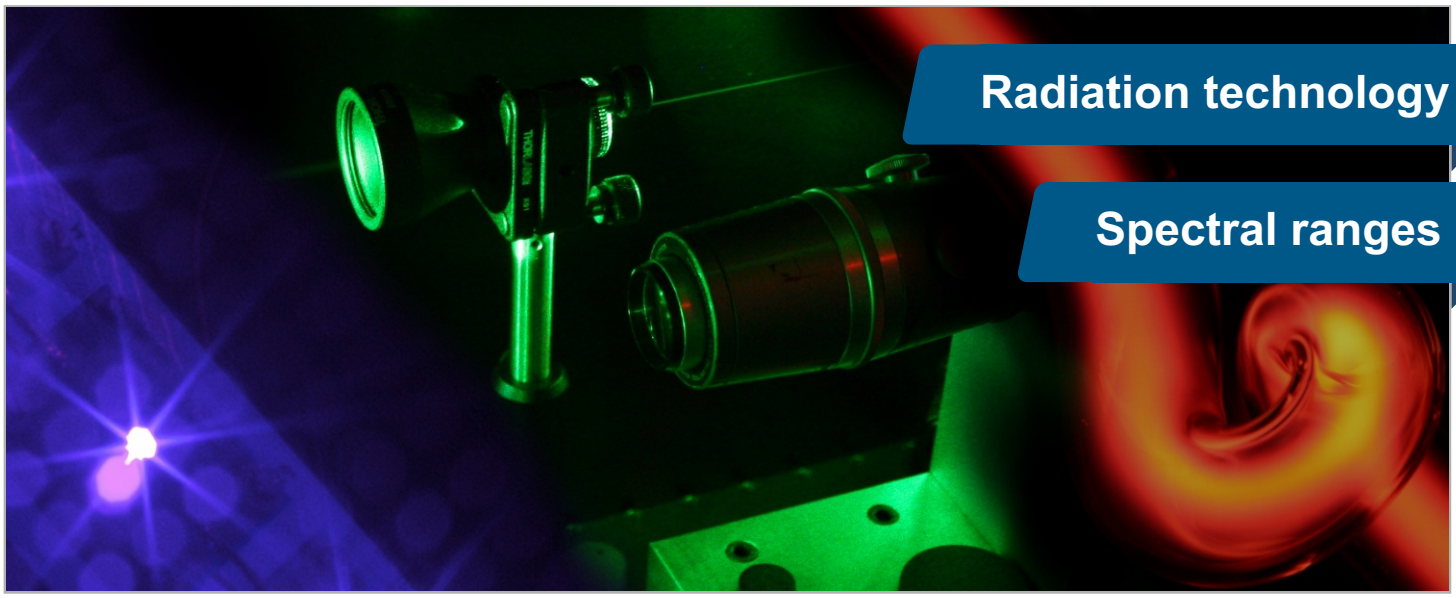
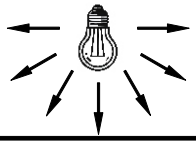
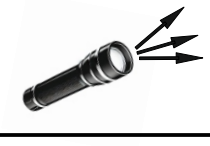
Opsytec Dr. Gröbel



Radiation technology

Spectral ranges

Quantity	Definition	Explanation
Radiant flux Φ 	$\Phi = \int \varphi_{e\lambda}\ d\lambda$ unit: W	The radiant flux is the total emitted radiant power.
Irradiance E 	$E = \frac{\Phi}{A}$ unit: W / m² , mW / cm²	Irradiance is the radiation hitting a surface element. It does not matter from which direction the irradiation occurs.
Radiance L 	$L = \frac{\Phi}{A_p \omega}$ unit: W/(sr m²)	The radiance of a surface element A_p is the quotient of the radiated radiant flux to the product of surface element and solid angle.
Radiant intensity I 	$I = \frac{\Phi}{\omega}$ unit: W/sr	The radiant intensity of a point light source in a in a defined direction is the quotient of the radiant flux emitted to the corresponding solid angle element.

Designation of the radiation		Abbreviation		Wavelength λ[nm]			Photonen energy [eV]			Detector (examples)
ultra-violet radiation	Vacuum-UV	UV	UV-C	VUV	100	to	200	12,4	to	6,2	Cs-I,Cs-Te
	Far UV			FUV	200	to	280	6,2	to	4,4	
	Mid UV		UV-B		280	to	315	4,4	to	3,9	SiC
	Near UV		UV-A		315	to	400	3,9	to	3,1	
Visible radiation,light		VIS			380	to	780	3,3	to	1,6	Alkali PMT Si
Infrared radiation	Near IR	IR	NIR	IR-A	780	to	1400	1,6	to	0,9	Si, Ge, InGaAs
				IR-B	1400	to	3000	0,9	to	0,4	InAs
	Mid IR		IR-C	MIR	3000	to	$5 \cdot 10^4$	0,4	to	0,025	PbSnTe, PbSnSe
	Near IR			FIR	$5 \cdot 10^4$	to	10^6	0,025	to	0,001	

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