



## Handbook of the EuroLaser Academy

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Book Condition: New. Publisher/Verlag: Springer, Berlin | Volume 2 | If in some processes oxygen is used, additional energy is provided at a rate  $P_{ch}$  by chemical reactions. The flow of energy per unit time can then be written: (1. 2) From the above it can be made clear that it is the rate of energy fluxes, i. e. 2 intensities [J/ms] that determines into which channel the energy goes and how the interaction zone will be modified in its state (solid, liquid, gaseous) and geometrical shape (plane, dip, deep hole) -in other words which kind of treatment process will be established (hardening, welding, drilling etc. ). In the following, it will be shown that, in fact, it is the intensity of the beam, which together with the interaction time, primarily governs the interaction phenomena. 1. 1. 2 Laser beam properties determining interaction and energy coupling etJeets In order to yield an efficient process, it is necessary to obtain adequate intensity at the workpiece and to couple a fraction of the incident power as high as possible into the material. The beam properties being of importance in this respect are, (Hugel, 1992): 1. the wavelength  $\lambda$  , governing, in...



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