The Role of A Sub -Target in the Tea CO2 Laser-Induced Shock-Wave Plasma

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Abstrak

A TEA CO2 laser pulse (50 mJ, 100 ns) was focused under reduced pressure on the silicone grease painted on copper plate as a sub-target with a power density of 6 GW/cm2. The comparison was made on the characteristics of the induced laser plasma between the two cases, with sub-target and without sub-target. It is proved that emission spectrum assigned to silicone atom can be detected only for the case with sub-target. It is also proved that in the absence of the sub-target, the gushing speed of the atoms is very low, while for the case with sub-target, the gushing speed of atoms becomes very fast. It is shown that the setting of sub-target is very effective to make laser-induced shock-wave plasma and it is very effective to realize quantitative analysis of soft material.