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Laser Ignition Characteristics of RDX-CMDB Propellants

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Abstract: Laser ignition characteristics of double-based (DB) propellant SQ-2 and RDX-CMDB propellants were studied by CO₂ laser ignition at different laser fluxes. The effects of content of RDX, Al powder and burning catalysts on ignition characteristics of RDX-CMDB were discussed. Results show that the laser ignition delay time of DB propellant SQ-2 and RDX-CMDB propellants except the sample containing Al powder becomes shorter with the heat fluxes increasing, and its change slows down. The influence of the content of RDX, the additives of Al powder and the burning catalysts on the ignition delay time was related with the laser fluxes. The content of other components had little effect on the laser ignition delay time of propellants. Al powder could prolong the delay time at lower heat fluxes, and the delay time increased with increasing of the content of RDX, and Al powder and the catalysts in the propellant had both great influence on the laser ignition process and the delay time of the propellants at the higher heat fluxes.

Key words: physical chemistry; double-based propellant; laser ignition; heat flux; ignition delay time

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第三届固体推进剂安全技术研讨会征文通知(第三轮通知)

因计划调整,第三届固体推进剂安全技术研讨会定于2011年7月下旬在福建武夷山召开,此次会议由航天工业固体推进剂安全技术研究中心主办,航天科技集团公司四院四十二所承办。

会议主题: 固体推进剂安全技术研究进展与发展方向

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- 1、固体推进剂安全技术研究进展与发展方向
- 2、固体推进剂配方与新型含能材料安全性
- 3、固体推进剂安全性试验方法与测试技术
- 4、固体推进剂安全性数值模拟及仿真分析技术
- 5、固体推进剂安全性评估、评价方法
- 6、固体推进剂降感方法及安全控制技术
- 7、固体推进剂低易损性技术
- 8、固体推进剂及固体导弹安全性相关技术

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