

参考文献

- 1 Knopf P W, Martin R J. Correlation of laboratory and flight data for the effects of atomic oxygen on polymeric materials. AIAA Paper, AIAA—85—1066:1~11
- 2 Michael F, Hitchcock. A review of polymeric satellite thermal control material considerations. SAMPE Journal, 1983; 19(5): 15~18
- 3 Hall D F, Fote A A. 10 year performance of thermal control coatings at geosynchronous altitude. AIAA Paper, AIAA—91—1325:1~12
- 4 Bourassa R J, Gillis J R, Rousslang K W. Atomic oxygen and ultraviolet radiation mission total exposures for LDEF experiments. LDEF—69 Months in Space, First Post-Retrieval Symposium. NASA CP3134, June 2-8, 1991: 634~661
- 5 Banks B. Atomic oxygen interactions with FEP teflon and silicones on LDEF. LDEF—69 months in space, first post-retrieval symposium, NASA CP3134, June 2-8, 1991: 801~816
- 6 Lee A L, Rhoads G D. Prediction of thermal control surface degradation due to atomic oxygen interaction. AIAA Paper, AIAA—85—1065:1~4
- 7 Murphy T J, David K E. Solid film lubricants and thermal control coatings flown aboard the EOIM-3 MD sub-experiment. AIAA Paper, AIAA—94—0473: 1~10
- 8 赵飞明, 张廉正, 曾一兵等. 低太阳吸收率、高发射率有机硅热控涂层进展. 宇航材料工艺, 1998; (3): 12
- 9 Harada Y, Mell R J. Inorganic thermal control coatings: a review. AIAA Paper, AIAA—83—0074:1~8
- 10 Linton R C. Effects of space exposure on thermal control coatings. AIAA Paper, AIAA—92—0795:1~10
- 11 Guillaumon J C. Spacecraft thermal control coatings. LDEF—69 Months in Space, First Post-Retrieval Symposium, NASA CP3134, June 2-8, 1991: 945~960
- 12 Dever J, Slomp W. Evaluation of thermal control coatings for use on solar dynamic radiators in low earth orbit. AIAA Paper, AIAA—91—1327:1~11
- 13 Hagemeyer Jr W A. Surveyor white paint degradation. J. Spacecraft, 1967; 4(6): 828
- 14 Kroes R L. Effects of ultraviolet irradiation on zinc oxide. AIAA Paper, AIAA—70—829:1~16
- 15 Mossman D L, Barsh M K. Ultraviolet and electron irradiation of DC—704 siloxane oil on zinc orthotitanate paint. AIAA Paper, AIAA—82—0865:1~5
- 16 Hurley C J. Long duration exposure facility experiment M0003—5 thermal control materials. LDEF—69 Months in Space, First Post-Retrieval Symposium. NASA CP3134, June 2-8, 1991: 961~974
- 17 Duckett R J, Gilliland C S. Variable anodic thermal control coating on aluminum. AIAA Paper, AIAA—83—1492:1~5
- 18 Hall D F, Fote A A. α measurements of thermal control coatings on the P78—2 (SCATHA) spacecraft. AIAA Paper, AIAA—80—1530:1~11
- 19 Chalmers D R. Solar absorptance degradation of OSR radiators on European communication satellites. AIAA Paper, AIAA—84—1700: 1~7

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单晶硅掺杂新技术

中子嬗变掺杂硅是将原始单晶硅放入反应堆孔道中进行辐照,从而实现硅材料的磷掺杂,再经过必要的处理后,获得性能优良的N型非本征硅(NTD硅)。它具有常规掺杂硅无法比拟的掺杂均匀性好和精度高的特点。经器件处理后,硅片基区电阻率与设定值的最大偏差为 $\pm 10\%$ 。

中子辐照掺杂方法提高了硅的价位,使原始单晶硅的利用率达到100%,大大提高了经济效益。利用NTD硅大大提高了器件性能和成品率。应用范围逐步扩大,已从大功率器件扩展到中、小功率器件及一般二极管、三极管。

·李连清·