



航空学报 » 2006, Vol. 27 » Issue (5) :969-972 DOI:

论文

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### 炭化压力对沥青成焦组织和形貌的影响

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### Effect of Carbonization Pressure on Microstructure and Morphology of Pitch Derived Carbon

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摘要

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**摘要** 将中间相沥青和普通沥青在不同压力下进行炭化,分析两种沥青在不同压力下的成焦偏光组织和扫描形貌。结果表明,两种沥青炭化后的组织随压力的不同而不同。中间相沥青焦低压时以小域组织为主,高压时以广域组织和流线型组织为主。普通沥青焦在低压时以针状细流线组织为主,高压时以镶嵌型组织和小域组织为主。扫描分析表明,两种沥青炭随炭化压力的增大,气孔逐渐由孔径大小不均的大孔变为孔径较均一的小孔。在相同的炭化压力40MPa下,中间相沥青焦以层片状结构为主,而普通沥青焦以层片状和“葡萄”状结构为主。

**关键词:** 中间相沥青 普通沥青 炭化 微结构 形貌

**Abstract:** Pitch cokes are prepared by carbonization of mesophase pitch and normal pitch at different pressures. Polarized-light microscopy (PLM) and scanning electron microscopy (SEM) are used to observe the morphology of above cokes at different pressures. The results show that the pitch cokes have different morphologies at different pressures using PLM analysis. The mesophase pitch coke at low pressure and high pressure are mainly of small domains, domain and flow domain respectively. The normal pitch coke at low pressure and high pressure are mainly of acicular flow domain anisotropy, mosaics and small domains respectively. The result of SEM shows that the pores change from big pores in different sizes to small ones in uniform size along with increasing carbonization pressure for two types of pitches. When the carbonization pressure is 40 MPa, the morphology of mesophase pitch coke is mainly of layered structure and that of normal pitch is layered and grapy structure.

**Keywords:** mesophase pitch normal pitch carbonization microstructure morphology

Received 2005-05-11; published 2006-10-25

#### 引用本文:

卢锦花;李贺军;刘皓;李克智;张美忠. 炭化压力对沥青成焦组织和形貌的影响[J]. 航空学报, 2006, 27(5): 969-972.

LU Jin-hua;LI He-jun;LIU Hao;LI Ke-zhi;ZHANG Mei-zhong. Effect of Carbonization Pressure on Microstructure and Morphology of Pitch Derived Carbon[J]. Acta Aeronautica et Astronautica Sinica, 2006, 27(5): 969-972.

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