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β_1相非等温时效对Cu-Al-Ni-Mn-Ti合金热弹性马氏体转变的影响①

江明朴[1]，金展鹏[1]，尹志民[1]，徐根应[2]

(1.中南工业大学材料系,长沙410083;
2.安微工学院，合肥230069)

摘 要： 研究了Cu-Al-Ni-Mn-Ti合金β_1相非等温时效过程。在时效前期主要是DO3有序畴长大和畴内次近邻原子的高度有序化，它引起马氏体点升高。在时效后期，合金中发生了贝氏体转变，它使基体溶质原子富集，导致马氏体点下降，马氏体量减少。在更高的温度下，合金分解成平衡组织。贝氏体及其它析出物的机械阻碍作用使马氏体相变滞后增宽。

关键字： 形状记忆合金 马氏体 Cu基合金 时效

EFFECT OF NON-ISOTHERMALβ1-PHASE AGING ON THERMOELASTIC MARTENSITE TRANSFORMATION OF Cu-Al-Ni-Mn-Ti ALLOY

Wang Mingpu, Jin Zhanpeng, Yin Zhiming, Xu Genying*

（Department of Materials Science and Engineering,
Central South University of Technology,Changsha 410083
*Anhui Institute of Technology,Hefei 230069）

Abstract: Non-isothermalβ1-phase aging of Cu-Al-Ni-Mn-Ti alloy was studied. The main structure changes in the alloy during earlier period of aging are growth of DO3order domain and high ordering ofnnnatomic pair in the domain, which makes the martensite characteristic temperatures rise. During later period of aging, the bainite transformation takes place in the alloy, which lowers martensite characteristic temperatures and makes martensite amount decrease owing to concentration of solute atoms in the matrix. Further aged at higher temperature, the alloy decomposes into equilibrium phases. The mechanical retardation of bainite and other precipitation make the martensite transformation hysteresis become wider.

Key words: shape memory alloy martensite Cu-base alloy aging

地 址：湖南省长沙市岳麓山中南大学内 邮编： 410083

电 话： 0731-88876765，88877197, 88830410 传真： 0731-88877197

电子邮箱： f-ysxb@mail.csu.edu.cn