

论文

紫外射线辐照制备Cu₂O超细粉及其宏观动力学

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摘要: 采用高压和低压汞灯紫外射线辐照制备了Cu₂O超细粉经过校正的低压汞灯单色254nm辐照的宏观反应动力学近似为一级反应与⁶⁰Co源γ射线辐照和200MeV直线加速器电子束韧致辐射转换而来的高能γ射线辐照相应溶液的宏观动力学做了比较. 结果表明, 三者有一定的相似性紫外射线辐照生成Cu₂O超细粉的过程包含有光化学效应和辐照效应, 有水合电子的作用.

关键词: 紫外射线辐照 Cu₂O超细粉 反应动力学 γ射线辐照

PREPARATION OF Cu₂O ULTRAFINES BY ULTRAVIOLET RADIATION AND THEIR MACRO-DYNAMICS

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Abstract: According to the corrected macro-dynamics data of irradiation process by using low-voltage mercury lamp with monochromatic 254 nm, the formation reaction of Cu₂O ultrafines in a liquid environment is regarded approximately as one-order reaction. Comparing macro-dynamics of ultraviolet radiation with those of γ-Ray radiation from ⁶⁰Co and high energy γ-Ray radiation translated from the electron beam in the 200 MeV linac of the synchrotron facility, it is well known that there are some resemblances among those processes, i.e. The preparing process of Cu₂O ultrafines by using ultraviolet radiation in a liquid environment contains both the photochemical effect and the reductive effect of solvated electron produced by ultraviolet radiation. The latter is similar to that of solvated electron produced by γ-Ray radiation.

Keywords: ultraviolet radiation Cu₂O ultrafines macro-dynamics γ-Ray radiation

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