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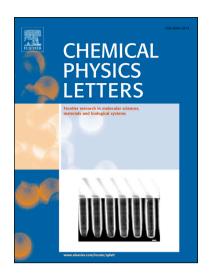
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ACCEPTED MANUSCRIPT

One-step fabrication of carbon decorated Co₃O₄/BiVO₄ p-n

heterostructure for enhanced visible-light photocatalytic properties

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Abstract

A novel carbon modified Co₃O₄/BiVO₄ p-n heterojunction photocatalyst

(Co₃O₄/BiVO₄/C) is prepared via one-step method. The Co₃O₄/BiVO₄/C photocatalyst

is characterized by SEM, Raman, UV-vis DRS, electrochemical performance analysis

and so forth. In addition, the optimum activity of the Co₃O₄/BiVO₄/C p-n

heterojunction is higher than that of pure Co₃O₄ and BiVO₄ for the degradation of

tetracycline under visible light. The improved photocatalytic property could be

ascribed to the enhanced light absorption and the facilitated separation of

photogenerated charge carriers through forming a p-n heterojunction. Furthermore,

the Co₃O₄/BiVO₄/C has superior magnetic properties, recyclability and stability,

which is conducive to practical application.

Keywords: Yeast; Co₃O₄; BiVO₄; Antibiotics; Visible light.

1. Introduction

Environment pollution is one of the most urgent issues facing modern society due

to the accelerated development of industrialization. As a result, photocatalysis has

received extensive attention for water treatment, pollutant removal and so on [1-4].

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