

Accepted Manuscript

Research on the techniques of ultrasound-assisted liquid-phase peeling, thermal oxidation peeling and acid-base chemical peeling for ultra-thin graphite carbon nitride nanosheets

Jingang Cui, Dawei Qi, Xue Wang

PII: S1350-4177(18)30440-1

DOI: <https://doi.org/10.1016/j.ultsonch.2018.05.020>

Reference: ULTSON 4178

To appear in: *Ultrasonics Sonochemistry*

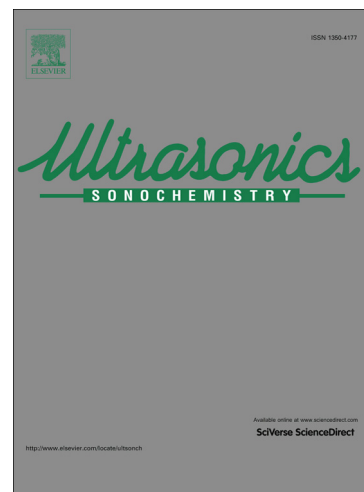
Received Date: 17 March 2018

Revised Date: 10 May 2018

Accepted Date: 17 May 2018

Please cite this article as: J. Cui, D. Qi, X. Wang, Research on the techniques of ultrasound-assisted liquid-phase peeling, thermal oxidation peeling and acid-base chemical peeling for ultra-thin graphite carbon nitride nanosheets, *Ultrasonics Sonochemistry* (2018), doi: <https://doi.org/10.1016/j.ultsonch.2018.05.020>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Research on the techniques of ultrasound-assisted liquid-phase peeling, thermal oxidation peeling and acid-base chemical peeling for ultra-thin graphite carbon nitride nanosheets

Jingang Cui¹ Dawei Qi¹ Xue Wang²

1. College of Science, Northeast Forestry University, Harbin, Heilongjiang Province of China, 150040

2. School of mechanical engineering, Beijing University of Technology, Beijing 100124, China

Abstract: Graphite phase carbon nitride (g-C₃N₄) composite structure materials, as a kind of stable compound with graphite-like structure, has attracted more and more attention due to its excellent properties, such as being able to absorb solar energy, stable chemical and optical properties and having a suitable oxidation potential. However, its application in the field of photocatalysis is limited by its small specific surface area and poor dispersibility. To solve this problem, ultra-thin g-C₃N₄ nanosheets are often prepared using peeling methods. In this paper, the current status and mechanism of thermal oxidation peeling, ultrasound-assisted liquid-phase peeling and acid-base chemical peeling are reviewed in detail. In addition, the future research directions of ultra-thin graphite-like carbon nitride nanosheets are discussed

Keywords: nanomaterials; carbon nitride; nanosheets;

1. Introduction

As a typical layered material, graphitic phase carbon nitride (g-C₃N₄) nanosheets have attracted wide attention in the research fields of energy, environment and biology because of their special electronic structure and excellent performance.

The industrial revolution opened in the second half of the eighteenth century brought great convenience to human society[1]. At the same time, there are many problems such as energy shortage and environmental pollution because of the large number of fossil fuels. It brings great challenges to the sustainable development of human society. However, the traditional treatment methods, such as garbage burning, burying, carbon adsorption, air separation and other pollution treatment measures, have not fundamentally solved the problem of pollution, or even caused two pollution[2].

Download English Version:

<https://daneshyari.com/en/article/7702136>

Download Persian Version:

<https://daneshyari.com/article/7702136>

[Daneshyari.com](https://daneshyari.com)