SYSTEM AND METHODS FOR FABRICATING BORON NITRIDE NANOSTRUCTURES

Tech ID: 24316 / UC Case 2015-024-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,006,210	06/11/2024	2015-024
United States Of America	Issued Patent	11,345,595	05/31/2022	2015-024
Hong Kong	Published Application	40031315 A	03/12/2021	2015-024
European Patent Office	Published Application	3718965	10/07/2020	2015-024

Additional Patents Pending

BRIEF DESCRIPTION

A research team led by Alex Zettl has developed a variable pressure, powder/gas/liquid injection inductively coupled plasma system that is used to produce high quality boron nitride nanotubes (BNNTs) at continuous rates of 35 g/hour. For example, in this system, boron powder is introduced to a directed flow of plasma and boron nitride nanostructures are formed in a chamber. This system can produce collapsed BN nanotubes (nanoribbons) and closed shell BN capsules (nanococoons). The system is also adaptable to a large variety of feedstock materials.

SUGGESTED USES

Scalable production of boron nitride nanomaterials that can be used in high temperature environments or harsh chemical environments, e.g., aerospace or nuclear industries.

ADVANTAGES

Scalable production of high quality BNNTs at continuous rates of 35 g/hour

RELATED MATERIALS

» Scaled Synthesis of Boron Nitride Nanotubes, Nanoribbons, and Nanococoons Using Direct Feedstock Injection into an Extended-Pressure, Inductively-Coupled Thermal Plasma - 07/08/2014

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OTHER INFORMATION

KEYWORDS

boron nitride nanotubes, scalable nanotube synthesis, inductively coupled plasma, hyperbaric plasma, BNNTs, BN nanotubes, BN capsules, nanococoons, boron nitride

CATEGORIZED AS

» **Materials & Chemicals**

» Composites

» Nanomaterials

» **Nanotechnology**

» Materials

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RELATED CASES

2015-024-0