

Title (en)
GRAPHENE PRODUCTION METHOD

Title (de)
GRAPHENHERSTELLUNGSVERFAHREN

Title (fr)
MÉTHODE DE PRODUCTION DE GRAPHÈNE

Publication
EP 4291527 A1 20231220 (EN)

Application
EP 22705562 A 20220211

Priority
• GB 202101925 A 20210211
• GB 2022050373 W 20220211

Abstract (en)
[origin: GB2603861A] A method whereby a mixture of expanded graphite and a liquid is subjected to high-shear mixing in order to exfoliate the expanded graphite and produce graphene. The exfoliation may be performed for between 8 to 24 hours by in-line, rotor-stator assembly 3 rotating at 6000-9000 RPM. The ratio of expanded graphite to liquid may be from 0.01:1 to 0.1:1. The liquid may comprise water and/or an organic solvent and the mixture may contain a surfactant. Graphene production may be performed in a continuous or semi-continuous process. The expanded graphite may be produced by intercalating graphite with an intercalating compound followed by thermal treatment. The expanded graphite may have a lateral size of between 100-500 microns. The production of the expanded graphite may use microwave radiation, ball milling or fluidised bed air milling.

IPC 8 full level
C01B 32/182 (2017.01); **C01B 32/192** (2017.01)

CPC (source: EP GB)
C01B 32/182 (2017.07 - EP); **C01B 32/19** (2017.07 - GB); **C01B 32/192** (2017.07 - EP); **C01B 32/225** (2017.07 - GB)

Citation (search report)
See references of WO 2022172021A1

Designated contracting state (EPC)
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Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
GB 202201804 D0 20220330; **GB 2603861 A 20220817**; EP 4291527 A1 20231220; GB 202101925 D0 20210331;
WO 2022172021 A1 20220818

DOCDB simple family (application)
GB 202201804 A 20220211; EP 22705562 A 20220211; GB 202101925 A 20210211; GB 2022050373 W 20220211