

Title (en)  
HIGH GROWTH RATE DEPOSITION FOR GROUP III/V MATERIALS

Title (de)  
ABLAGERUNG VON GRUPPE-III/V-MATERIALIEN MIT HOHER WACHSTUMSRATE

Title (fr)  
DÉPÔT À VITESSE DE CROISSANCE ÉLEVÉE DE MATÉRIAUX DU GROUPE III/V

Publication  
**EP 3563405 A1 20191106 (EN)**

Application  
**EP 18779506 A 20180907**

Priority  
• US 201715717694 A 20170927  
• US 2018049869 W 20180907

Abstract (en)  
[origin: WO2019067177A1] Aspects of the disclosure relate to processes for epitaxial growth of Group III/V materials at high rates, such as about 30  $\mu\text{m/hr}$  or greater, for example, about 40  $\mu\text{m/hr}$ , about 50  $\mu\text{m/hr}$ , about 55  $\mu\text{m/hr}$ , about 60  $\mu\text{m/hr}$ , about 70  $\mu\text{m/hr}$ , about 80  $\mu\text{m/hr}$ , and about 90-120  $\mu\text{m/hr}$  deposition rates. The Group III/V materials or films may be utilized in solar, semiconductor, or other electronic device applications. The Group III/V materials may be formed or grown on a sacrificial layer disposed on or over the support substrate during a vapor deposition process. Subsequently, the Group III/V materials may be removed from the support substrate during an epitaxial lift off (ELO) process. The Group III/V materials are thin films of epitaxially grown layers containing gallium arsenide, gallium aluminum arsenide, gallium indium arsenide, gallium indium arsenide nitride, gallium aluminum indium phosphide, phosphides thereof, nitrides thereof, derivatives thereof, alloys thereof, or combinations thereof.

IPC 8 full level  
**H01L 21/20** (2006.01); **H01L 31/18** (2006.01)

CPC (source: EP KR)  
**C23C 16/301** (2013.01 - KR); **C23C 16/52** (2013.01 - KR); **H01L 21/02538** (2013.01 - EP); **H01L 21/0254** (2013.01 - EP KR); **H01L 21/02543** (2013.01 - EP); **H01L 21/02546** (2013.01 - EP KR); **H01L 21/02573** (2013.01 - KR); **H01L 21/0262** (2013.01 - EP KR)

Citation (search report)  
See references of WO 2019067177A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2019067177 A1 20190404**; CN 110582838 A 20191217; EP 3563405 A1 20191106; JP 2020535626 A 20201203; KR 20210088771 A 20210715

DOCDB simple family (application)  
**US 2018049869 W 20180907**; CN 201880024678 A 20180907; EP 18779506 A 20180907; JP 2019541292 A 20180907; KR 20197022544 A 20180907