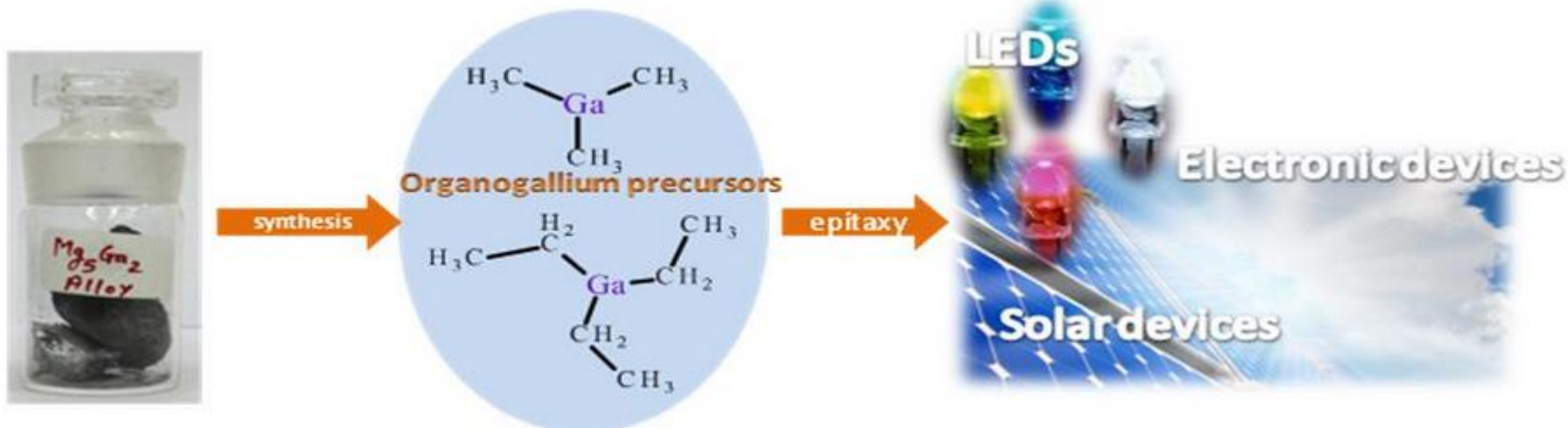


MAGNESIUM-GALLIUM ALLOY FOR THE SYNTHESIS OF TRIALKYLGALLIUM COMPOUNDS



The increasing demand of gallium based materials (e.g. GaAs, GaP, GaN, etc) for micro-electronic devices (e.g. optoelectronic devices, solar panels) has been a driving force for the preparation of organogallium compounds in a convenient manner. Special stoichiometric magnesium-gallium alloys are versatile reagents used for the synthesis of a range of organogallium compounds. The latter find application in organometallic chemistry, catalysis and in materials science for gallium based semiconductors of gallium based semiconductor materials (e.g. GaAs, GaN, GaP, GaSb, InGaAs, InGaN, AlGaInP, InGaP and AlInGaNP) via metalorganic vapour phase epitaxy (MOVPE). With special emphasis of the Government of India on setting semiconductor device manufacturing firms in India, the demand for indigenously sourced raw materials is expected to rise.

Salient Features

- Gallium magnesium alloy is easy to handle and can be stored in ambient conditions.
- Use of hygroscopic and expensive chemicals like GaCl₃ and MeLi or toxic R₂Hg can be avoided.
- Makes the synthetic route simpler.
- Results in higher yields and low levels of trace metal impurities.

Application

- Special stoichiometric magnesium-gallium alloys are versatile reagents used for the synthesis of a range of organogallium compounds.
- The latter find application in organometallic chemistry, catalysis and in materials science for gallium based semiconductors of gallium based semiconductor materials (e.g. GaAs, GaN, GaP, GaSb, InGaAs, InGaN, AlGaInP, InGaP and AlInGaNP) via metalorganic vapour phase epitaxy (MOVPE) which are used in fabrication of optoelectronic, microelectronic devices and solar panels.