HIGH VOLUME DELIVERY SYSTEM FOR GALLIUM TRICHLORIDE

ABSTRACT

The present invention is related to the field of semiconductor processing equipment and methods and provides, in particular, methods and equipment for the sustained, high-volume production of Group III-V compound semiconductor material suitable for fabrication of optic and electronic components, for use as substrates for epitaxial deposition, for wafers and so forth. In preferred embodiments, these methods and equipment are optimized for producing Group III-N (nitrogen) compound semiconductor wafers and specifically for producing GaN wafers. Specifically, the precursor is provided at a mass flow of at least 50g Group III element/hour for a time of at least 48 hours to facilitate high volume manufacture of the semiconductor material. Advantageously, the mass flow of the gaseous Group III precursor is controlled to deliver the desired amount.

Fig. 2A