商品紹介

Metal-organic chemical vapor deposition system for GaN epi-wafer mass production “UR26KCCD”

GaN エピウエハ量産 MOCVD 装置“UR26KCCD”

1. Introduction

Taiyo Nippon Sanso Corporation (TNSC) has been developing the UR26K MOCVD platform since 2012 for the GaN epi-wafer mass production[1]. In addition, TNSC had developed a dry-cleaning system for removing the post epi-growth deposition on the MOCVD reactor’s interior components[2] Here, a novel MOCVD system is introduced, the UR26KCCD (Fig. 1) for mass production that combines the benefits of the UR26K and component dry cleaning.

Fig.1 Picture of UR26KCCD System

2. Characteristics

The UR26KCCD MOCVD system which includes integrated wafer cassette to cassette (CtoC) and integrated dry-cleaning (Fig. 2). The CtoC and dry-cleaning systems are optimized for highest operational efficiency (patent pending). The optimized configuration a) enables reduce foot print and b) has fully automated GaN epi-wafers handling and c) delivers increased MOCVD reactor operational efficacy. Overall, the UR26KCCD exhibits double the throughput of that of the standardUR26K.

Fig. 2 Picture of dry-cleaning system

3. Specifications

Table 1 lists UR26KCCD specifications.

Table 1 UR26KCCD specifications

MOCVD	Reactor	Type	Face up and horizontal flow
		Capacity	8” by 6 wafers or 6” by 10 wafers
	Heating system		Resistance heater
	MO line		7 lines (TMGa etc.)
	Hydride line		2 lines (NH_3, SiH_4)
CtoC	Pass box for wafer		2 boxes (for in and out)
Dry-cleaning	Reactor	Type	Double-layered structure
		Capacity	1 set of MOCVD interior components
	Heating system		Infrared lamp heater
	Etching gas		HCl or Cl_2

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Reference
1) TOKUNAGA Hiroki, UBUKATA Akinori, YOSHIKI Yano, YAMAOKA Yuya, TABUCHI Toshiya, YAMAGUCHI Akira, UEMATSU Kunimasa, Uchiyama Kousuke, Matsumoto Kou, TAIYO NIPPON SANSO Technical Report No.31 (2012) (Japanese)
2) FUKUDA Yashushi,TOMITA Nobuyasu, ORITA Takashi, AKUTSU Nakao, IKENAGA Kazutada, UEMATSU Kunimasa, KOSEKI Syuuichi, MATSUMOTO Koh, HASAKA Satoshi, TAIYO NIPPON SANSO Technical Report No.25 (2006) (Japanese)