Global and China LED Industry Report, 2009-2010

LED is currently the most popular investment topic in the electronic field. Take the MOCVD equipment of LED upstream as an example, the estimated shipment of MOCVD equipment in 2010 will reach 662, equivalent to the sum total of the previous three years, and promisingly, Year 2011 will maintain or even exceed this high shipment. The unit selling price of MOCVD equipment is about US$1-2 million, and Chinese government offers a maximum subsidy of 50%, consequently, there occurs an upsurge of LED investment and a boom in MOCVD purchase in China. In 2010, the quantity of MOCVD equipment registered with National Development and Reform Commission (NDRC) alone is nearly 700, and some manufacturers even purchase directly instead of waiting for the subsidy of NDRC. MOCVD equipment is almost monopolized by German AIXTRON and American VEECO, but the output capacities of both companies are limited, so, the orders have been arranged till 2012.

LED market made a great leap in the second half of 2009. On the one hand, the application of LED backlight by notebooks surged from 15% at the end of 2008 to approximately 60%, and is expected to hit 88%, or 98% according to the prediction of some institutions, by the end of 2010. On the other hand, the application of LED backlight by LCD TV increased from 0.01% at the end of 2008 to 10%, and is expected to reach 27% at the end of 2010, while the application of LED backlight by LCD display grew from 0.01% at the end of 2008 to 5%. The LED market has expanded dramatically, from US$7 billion in 2009 to US$10.7 billion in 2010, which is a growth rate unreachable by any other electronic products. Along with growing LED brightness and falling prices, the share of LED in general lighting field is expected to be increased greatly; general lighting market is of huge potential with the market size reaching US$100 billion. Promisingly, the LED market can reach US$20.4 billion in 2012.

The global LED market falls into three camps.

The 1st camp takes Japan, Europe & America as the representatives. The global Top 5 LED giants all belong to this camp, namely NICHIA, TOYODA GOSEI, LUMILEDS, CREE and OSRAM; this camp also covers TOSHIBA, PANASONIC and SHARP. It possesses high-class technologies, abundant patents and has been dedicated to the UHB-LED field for many years, aiming at both general lighting and automotive lighting markets. Japanese enterprises give a little attention to the LED in the backlight of consumer electronics, while European and American enterprises show no interest at all.

Manufacturers in South Korea and Taiwan form the 2nd camp. With integrated consumer electronics industry chain and interest in the LED for the backlight of consumer electronics, they are experiencing high-speed growth despite the gap with European and American enterprises in technology.

The manufacturers in Chinese Mainland belong to the 3rd camp. They are of small scale, scattered, and of low technology. Take packaging as an example, there are not more than 5 packaging plants in South Korea, while in Chinese Mainland, there are nearly 1,000, many of which are dealing with resin package of minimum technical content and few of which are engaged in SMD packaging. The annual revenue of all these manufacturers fails to reach that of EVERLIGHT, the leading enterprise in Taiwan, and there are also large discrepancies between EVERLIGHT and South Korean manufacturers. The technologies possessed by manufacturers in Chinese Mainland are low-level and many of the manufacturers produce quaternionic green/yellow LED which is mainly applied in outdoor landscape, decoration or advertisement. Mainland China is the world’s largest production base of consumer electronics, but the purchasing right is centralized in the hands of Taiwanese and South Korean manufacturers. As a result, the mainland manufacturers can only see the rapid development of LED market in consumer electronics field but cannot benefit from it. As for the general lighting field, it is more beyond their reach due to their backward technology.

The mainland manufacturers cannot share the high-growth LED market, but they have the highest investment enthusiasm and LED projects start everywhere. Large quantities of MOCVD equipment have been bought in and the LED project in Wuhu alone needs more than 200 sets of MOCVD equipment. A single set of MOCVD equipment possesses over 2,000 parameters, so, it is not so easy to produce qualified products. In addition, there are numerous thresholds for LED patent, and incaution will cause troubles. Some enterprises, especially NICHIA, are never bored with patent lawsuits.

Revenue of Global 21 LED Epitaxy Manufacturers, 2008-2010

	2008 (US$ mln)	2009 (US$ mln)	2010 (US$ mln)
NICHIA	1321	1233	1368
CREE	493	543	808
OSRAM	555	587	618
EPISTAR	313	397	653
SAMSUNG LED	188	516	928
PHILIPS (LUMILEDS)	213	260	418
OPTO TECH	197	169	220
TOYODA GOSEI	204	331	465
TOSHIBA	182	202	388
SHARP	142	150	368
FOREPI	44	65	119
ROHM	80	76	80
ARIMA	76	45	68
GENESIS	42	34	65
HUGA	61	68	115
SANAN	31	78	105
TEKCORE	30	41	81
LEXTAR		63	162
TYNTEK		81	101
LG INNOTEK		206	690
SEOUL SEMICON	258	319	603

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