JAPAN

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Osaka

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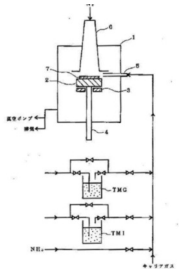
IP High Court confirms validity of essential patent for blue LED

Since it was invented by Thomas Edison in 1879, the incandescent filament lamp had played the leading part in the illumination field for more than a century. However, in the 1990s, Nichia Corporation made a breakthrough by succeeding in the practical use and mass-production of blue LED for the first time in the world and achieved a paradigm shift in the illumination field by the practical use and mass-production of white LED. This case is about the essential patent for the blue LED.



JPO

Unity Opto Technology, a Taiwanese corporation, filed a trial for patent invalidation against Nichia's patent regarding a method of growing indium gallium nitride semiconductor (JP2751963).

The Japan Patent Office (JPO) found that the invention claimed in JP 963 was one that grew a gallium nitride (GaN) layer by using hydrogen as a carrier gas thereafter switching the carrier gas and growing indium gallium nitride (InGaN) by using nitrogen as a carrier gas whereas in the prior art (D1) it was not clear which gas, hydrogen or nitrogen, was used as a carrier gas during the growth of the GaN layer and InGaN respectively. After identifying the difference between the invention and the prior art as described above, the JPO determined that the person skilled in the art would not have easily arrived at the difference based on prior art and well-known art, and dismissed Unity's request. Unity appealed to the IP High Court seeking rescission of the JPO's decision. Our firm represented Nichia.

Issue and arguments

The main issue was whether the person skilled in the art would have easily conceived to switch the carrier gas from hydrogen to nitrogen during the process of crystal growth at the priority date of JP 963.

Unity argued that the person skilled in the art would have easily conceived to switch the carrier gas based on D1 as follows: as D1 describes that the GaN layer and InGaN layer were grown by using hydrogen or nitrogen as a carrier gas, the person skilled in the art would have properly selected the optimal carrier gas (optimal choice) for GaN layer and the InGaN layer respectively and therefore would have easily conceived to select hydrogen to grow the GaN layer and then nitrogen to grow the InGaN layer.

Nichia argued that D1 describes the growth with a single carrier gas (hydrogen or nitrogen) through the whole process of crystal growth only and there was no description and suggestion to switch the carrier gas from hydrogen to nitrogen during the process of crystal growth. Nichia also argued that the invention and D1 differ in the problem to be solved.

IP High Court

In the judgment of April 24 2014, the IP High Court (Presiding Judge Iimura), accepting almost all of Nichia's arguments, held as follows and affirmed the JPO's decision:

> In D1, though there is a disclosure of using H2 or N2 as a carrier gas, there is no description and suggestion to switch the carrier gas in forming $Al_zGa_{1-z}N$ layer ($0 \leqq z \leqq 1$) (GaN layer) and $Ga_xIn_{1-x}N$ layer ($0 \leqq x \leqq 1$) respectively. In addition, when consecutively forming layers with different compositions by the metal organic chemical vapour deposition, switching the carrier gas according to the formed layer and forming all layers by using the same carrier gas differ in technological idea. No evidence is found to show a known art or a well-known art at the priority date to switch the carrier gas according to the formed layer when consecutively forming layers with different compositions by the metal organic chemical vapour deposition. Therefore, at the priority date, there was no technological idea to switch the carrier gas according to the formed layer. In light of the above, we find that the person skilled in the art who had access to D1 would understand that he or she can use either H2 or N2 as a carrier gas throughout in forming $Al_zGa_{1-z}N$ layer ($0 \leqq z \leqq 1$) (GaN layer) and $Ga_xIn_{1-x}N$ layer ($0 \leqq x \leqq 1$) and that it would not have been easily conceived to switch the carrier gas in forming GaN layer and InGaN layer respectively. Therefore, the person skilled in the art would not have easily arrived at the invention based on D1.

Practical tips

In deciding inventive step, the judgment pointed out that there was no description or suggestion in the prior art and that technological idea differs between the invention and the prior art. This conforms to the new criteria on inventive step proposed by the IP High Court, the judgment of January 28 2009 (Presiding Judge Iimura) introduced in our article titled "Hindsight excluded in inventive step" (Managing Intellectual Property, December 2013/January 2014). Thus, in the inventive step argument, both plaintiff and defendant have to make their arguments based on Judge Iimura's criteria, which requires description or suggestion in the prior art.

Recently, the IP High Court has held explanatory sessions in most patent cases and this case was not an exception. In the explanatory session, typically three technical advisers are assigned (two scholars and one patent attorney). After parties' presentations, technical advisers ask questions to parties and provide comments. We were successful to obtain a critical statement from the technical adviser that no idea existed at the priority date of JP 963 to switch the carrier gas. In recent patent cases, not only the quality of the brief but also the presentation and response in the explanatory session have become a crucial factor for success.