

## Frequently Asked Questions

Q1. The former employee who instituted this lawsuit states that he directly appealed the company management to start researching blue LED and to let him conduct studies on blue LED in the U.S. He also claims that the company's President at that time gave him permission to do so. Since the company merely supplied money, and this former employee performed all research and development on his own initiative, wasn't the large monetary award in his favor in the judgment of the first instance court to be expected?

A1. Nichia's research on gallium nitride-based semiconductor MOCVD growth originated from a proposal for joint research by Professor Shiro Sakai, currently a professor at the University of Tokushima. This proposal was conveyed to the current President (the Senior Managing Director at that time) through the former employee, with whom Professor Sakai had been communicating.

The company, which from before this time had been engaged in LED related research such as gallium refining, and liquid phase growth of gallium arsenide, partly due to advice from Professor Sakai that MOCVD would become predominant in future LED production, accepted his proposal for joint research.

However, MOCVD was a technology that Nichia had at that time never used before, so Professor Sakai also suggested that a Nichia researcher be sent to study at the University of Florida where the professor himself was then conducting research. Initially, the company considered nominating a different researcher, but partly because of Professor Sakai's recommendation, the company decided to send the former employee.

As the above makes clear, neither the company's research above nor the former employees' overseas study originated from the former employee's proposal.

Furthermore, as described in A2. below, in contrast to Nichia, which even in those initial stages made an investment in research costing some hundreds of millions of yen, this former employee was in the position throughout of having guaranteed income and employment from the company. Against this background, we believe it highly inappropriate and unfair for the company to be forced to pay the former employee such a sum as that specified in the judgment of the first instance court.

Q2. It has been reported that this former employee perfected the blue LED unaided and with poor research facilities. Was it that the company listened to his proposals only to start off with and then left him unassisted?

A2. As mentioned above in A1., research on gallium nitride-based semiconductors MOCVD growth did not originate from a proposal from the former employee. Furthermore, the company invested hundreds of millions of yen in installing a clean room and MOCVD equipment (see Photograph 2) on the sixth floor of the already completed R&D Building (see Photograph 1). This was done in accordance with the proposal from Professor Sakai and while the former employee was studying abroad. After his return, the former employee carried out research using large quantities of very expensive sapphire substrates and material source gas, which were supplied by the company. In addition, the company also installed other necessary facilities from time to time at his request. There were a number of other staff who assisted the former employee in his research.

In fact, up to the time of commercialization and beyond, the company increased both the amount of money spent for research, and the number of staff assigned to the blue LED development according to the progress of the research. (See Graph.) Prior to the product announcement in 1993, it is unlikely for there to have been any company in the world which made such a large investment of people, assets and money for research on gallium nitride – a substance which was widely regarded at the time as not having the potential to be a base material for blue LED.

Q3. Is it not highly opportunistic for the current President to have constantly blocked research – for example, issuing an order to the former employee to stop research and development – and then turn around and say that the successful results are his own as soon as they were obtained?

A3. According to the former employee, the President suggested to him that he do some research on materials (gallium arsenide) other than gallium nitride. The former employee used this to assert that the President gave him an order to stop research and development on gallium nitride.

Not only does the President himself have no recollection of ever making a stop-order like statement, neither the head of the R&D Department at the time nor the members of staff who worked under the former employee have any memory whatsoever of this happening.

Furthermore, throughout the period during which the R&D stop-order was supposed to have been given, the former employee himself recorded in the prescribed reports he submitted to the company that he was continuing research on gallium nitride without interruption. In this way the former employee's continued R&D work on gallium nitride was known to and approved by his superiors. In addition, even after the time the stop-order was allegedly given, the company continuously invested funds in the development of gallium nitride-based LEDs.

As is clear from the above, it is factually incorrect that the company gave him an order to stop research on gallium nitride. Further, no objective evidence indicating the existence of the alleged R&D stop-order was produced in the trial. Let us assume for a moment that the President did issue a stop-order and that the former employee ignored it, then he would surely have been transferred or disciplined in some way. However, nothing like this occurred. The "stop-order" is a complete fabrication by the former employee.

Q4. It seems this former employee was called a "slave" because of his very low salary. Was it really that low?

A4. No, his salary was not low. Immediately before he left the company, the former employee was a Senior Researcher, a research position with a Department Head's salary of the company. He was in his mid-40s, yet he received a sum in excess of the average salary of the company's Board members. Compared to other employees with the same number of years of service at the company, his was the highest salary, and even compared to employees with the same number of years of service at other companies his salary is unlikely to have been low.

Furthermore, in the year that he resigned, he spent almost half of the year away from the company attending academic conferences and the like, both in Japan and overseas, but unless there was something very irregular, the company agreed to all his requests, and bore all of his expenses. Of course, this was because it was recognized that the former employee's introduction of technology and the name of the company at these academic conferences contributed to society and enhanced the reputation of the company. However, even at renowned European and American corporate research institutes there typically seems to be a limit on the frequency of and expenses for attendance at academic conferences and similar activities. However, the company did not impose any such limits on him.

While the appraisal of the treatment of the former employee by the company may be different from the appraisal he gives himself, when viewed from a common sense perspective, the company cannot be thought of as having treated him unreasonably.

Q5. I heard that the former employee was condemned to performing menial tasks prior to his leaving the company. Isn't the judgment of the court of first instance a penalty against the company for treating the former employee who made a significant contribution to the company's success in this fashion?

A5. As described in A4., at the time he left the company, the former employee was a Senior Researcher (the highest level possible for a researcher and with a Department Head's salary) in the R&D Department. In addition to that, from September of that year, he was given the additional post of General Manager of the Nitride Semiconductor Research Laboratory. At the time of establishment of this Research Laboratory, no staff had yet been assigned to the Laboratory. However, the former employee was authorized to choose freely any nitride semiconductor related research and the company was planning to provide him with necessary funding, facilities, and personnel to conduct the research chosen by him.

In short, until he resigned, the former employee was at the apex of the researchers in the R&D Department, and within the scope of nitride semiconductors, the company was making preparations for him to research the subjects he wanted to pursue. He was not deprived of his position or staff, or anything like that.

However, it does appear that he had already decided to resign at this point, for in the end he did not commence any research at the Nitride Semiconductor Research Laboratory. Also, as described in A4., he was away on business trips for about 150 days a year, so he likely had insufficient time to research anything of his own.

Q6. I heard that the company never paid the former employee any of his severance benefits. Is this true?

A6. No, it is not true. Nichia paid him severance benefits in accordance with its internal company rules. As he retired of his own accord in his mid-40s, it was not such a large sum, but it still came to about the same amount as an average salaried employee's yearly income.

Q7. It appears that the subject patent of this lawsuit is a fundamental groundbreaking patent. Isn't a payment of 20,000 yen too low for this?

A7. The subject patent in the lawsuit he instituted was not a fundamental patent for blue

LED, but rather a patent related to a process for growing gallium nitride-based semiconductor film (MOCVD method), which is a basic material for blue LED. Other researchers had already succeeded in growing good quality gallium nitride-based semiconductor film using the MOCVD method, so it was not the case that as if this material would have been unavailable if the patented invention in this case did not exist. Accordingly, the patented invention of this case is not a fundamental patent for blue LED. Furthermore, you cannot make blue LED just by being able to obtain basic materials. The company's commercialization of blue LED became possible for the first time only when a number of further technological developments were made, which occurred after this invention.

The special feature of this patent is the horizontal flow of the material source gas across the substrate, and the flow of inert gas vertically onto the substrate. This kind of gas flow itself was recorded in a number of examples of prior art in general CVD technology at the time of the patent application so it is not a particularly novel idea. It is thought that if there had been a proceeding for invalidation, it is quite likely that the patent's validity could not have been maintained.

Further, as described in A8., the company used this invention only for about three years following the initial release of the blue LED onto the market, but apart from that nobody has used it, and there is nobody in this industry acknowledging this patent to be a fundamental patent.

The company rules at the time stated that the company was to pay 10,000 yen for each patent application, and 10,000 yen for each patent issuance. The company paid the former employee in accordance with the company rules. However, it must be remembered that the company employed him as a researcher, and that it paid him a salary for his research. As described in A5., the company took into account his other achievements as well and paid him a not insubstantial salary. He was also given considerable respect and benefits due to his status. Against this background, to claim that the company obtained the results of his research for only 20,000 yen is totally inappropriate.

Q8. The greater brightness of Nichia LED products compared to those of other companies is because of the use of the patented technology in the case. Was it not therefore inevitable that the court of the first instance ordered a large monetary award given the substantial contribution to Nichia's profits made by this patent?

A8. The blue LED products that other companies were selling in 1995 were brighter than

the ones the company released for sale at the end of 1993. Today, other companies are selling LED products with 20 times more output power than the first Nichia LED products sold. Competition in this area is extremely fierce. All companies involved in this market devise various ingenious ways to improve their performance. We cannot make brighter products than other companies just because we have this patent. If it were impossible to make bright LEDs without using this patent, no company would have been able to make bright products (even at the level we did in 1993) since no other company uses the invention in this patent.

Furthermore, the original LEDs we sold in 1993 were the brightest in the world at that time due to a number of technological developments separate from the invention in this patent. These other developments were made in the three-year period following the invention in this patent.

In addition, around the issuance of the patent, the company cleared to use the patented method because there were problems with the vertical inert gas flow onto the substrate – the main feature of the patented method. As mentioned above, it is said that dozens of firms around the world are currently manufacturing gallium nitride-based LEDs, but as far as the company is aware, there are no companies using the invention described in the patent, including those who have cross-licensed the patent from us. In other words, you could say that at the time this patent was issued, the technology contained within it was already seen as being unnecessary.

Q9. The decision of the court of first instance stated, “in light of the fact that blue LED was a much awaited technology in the industry, the commercialization of the patented invention was guaranteed success, and no particular risk or the like existed in the process.” Isn’t the amount awarded in the decision of the first instance court as “adequate consideration” for the invention unsurprising given that the company obtained profits under the patent so easily?

A9. It may well be a fact that there was an untapped demand for blue LED in the industry. However, the patented invention was not for blue LED. Rather it related to technology for growing a gallium nitride-based semiconductor film on a sapphire substrate. This film is a material used in blue LED, but it is not possible to make blue LED just with gallium nitride.

To place the patented invention in context, researchers from another corporate group had accomplished the biggest breakthrough in nitride semiconductors to that point, namely, low-temperature buffer layer technology, and good quality gallium nitride crystals could already

be obtained with it. The gallium nitride that the company was able to make using the patented invention was of a quality not much different from the gallium nitride that the other corporate group had obtained. Also, a type of electron beam irradiation technology called “P-type conversion” already existed, though useable blue LED could not be obtained with this method.

If there had not been a large number of inventions following the invention in question, including P-type conversion by annealing, the InGaN crystal growth method, optimal layer formation (double-heterostructure), and transparent electrode technology to transmit light efficiently, we would not have been able to perfect blue LED. Moreover, even following the announcement of blue LED, strong competition in technological development with rival companies, cost competition, and patent-related disputes continued to exist. The company was never in a situation at any point in time where you could say, “commercialization of the patented invention was guaranteed success”.

Q10. During arguments over the possible assignment of the patent to the former employer in the initial stages of the lawsuit, the company reportedly asserted that it owned the patent. Is it not contradictory to later say that the patent has no value?

A10. As to the issue with respect to the ownership of the patent rights the company did not assert that “the patent cannot not be handed over because it is valuable.” It is a patent the company received in a fair assignment from the former employee, who is the inventor, and the company offered a sound counterargument to his argument that there was no seal on the assignment so it was invalid, or that he submitted the assignment for form’s sake but had no intention of assigning the patent rights to the company.

Whatever the details of the invention, with respect to an invention (i) created by a salaried employee performing research at the company’s expense, (ii) in the process of performing his duties to the company, and (iii) applied for patent by the company personnel at the company’s expense, the company believes that a demand from an ex-employee to return an issued patent over the invention after resigning from the company is unconscionable. Of course, if the patent were worth 60 billion yen, the company would not have been able to accept the assignment from the inventor in the first place. Yet, even in that case, the company would statutorily have had a perpetual royalty free non-exclusive license over the employee’s invention. Moreover, since no other company tried to use the invention, we firmly believe that even if we did not own the patent for the invention, it would have had no effect on our development.

Q11. Up until the time the former employee resigned from the company, the company said he invented blue LED, but as soon as the case went to court, the company denied his achievements. Is that not odd?

A11. Nichia started the development of blue LED with the former employee as the person in charge of the project. The company has no intention of denying that he was at the center of things from the beginning and led the R&D, or that he was active as the face of the company, presenting the research results to the outside world. However, the development of blue LED was not something that could be done with just the knowledge and technology of one person alone. Various technological developments, and endless optimization of individual technological factors were required. It was not only the former employee, but also the other employees in the whole research team who worked to bring high-brightness blue LED into commercial reality for the first time by repeating experiments and making gradual improvements to the technology. It is not true that the former employee thought of all of these vast number of experiments. His subordinates carried out experiments, considering and overcoming the challenges one after the other by themselves.

Even within the company, people treated the success as the achievement of the research team that the former employee was leader of, so there was nothing particularly odd about his making external announcements as its representative. Also, the company did not think it was necessary to distinguish strictly between the results of superiors and subordinates when making external announcements, as all involved were fellow members of the same company. However, as a result of the litigation he initiated, it became necessary to rigorously investigate the exact contribution the former employee actually made as the inventor.