

## **Messages from Modern Inventors to the Next Generation**

### **3. *Painless Injection Needle* - Mr. Masayuki Okano, Okano Kogyo Co., Ltd.**



Injections are known to be painful, but a patient with diabetes has to take insulin injections several times a day. A medical equipment manufacturer, Terumo, searched for a manufacturer that could produce painless injection needles, but no company had been able to manufacture such a needle due to technical difficulties.

Mr. Okano, however, responded, “If no one else will do it, I’ll give it a go!” The existing process for manufacturing an injection needle involved sharpening the tip of a pre-cut narrow pipe. Mr. Okano established a new process that involved rolling up flat sheet metal into a tube, and thereby created a “painless injection needle” which is tapered with the finest tip in the world.

#### **What inspired you to become an inventor/researcher?**

After I dropped out of junior high school, I did not have a regular job. My mother would snap at me many times a day, saying “Listen. You must have your own profession to be a man. No more time-killers in our house! Make something of your life.” So I had no choice but to become involved in our family business.

My father owned a business making molds and dies for manufacturing products. A protruding punch (male) and the concave die (female) would be attached to a pressing machine, and a metal sheet would be sandwiched between them, forming a product.

My father and I had quite different characters. He was a sincere craftsman with the Meiji period mindset of when he had been born. I started to work for my father when I was sixteen. In those days high-achieving students went on to higher education, but other students could not choose the type of job they desired, and what’s worse, as a dropout of junior high school, I naturally had to work in the family business.

#### **What specific ideas and difficulties have you faced as an inventor/researcher?**

A man who desires to make possible what is impossible first must raise himself to the extent that he can make possible what is impossible. In other words, a man must first transform himself so that he is

capable of succeeding.

With such an attitude, anyone can overcome their limits. I have accomplished many tasks that have been considered impossible (i.e., what no one can or will ever be able to do), but while I was doing my work, I never felt the tasks were impossible, no matter how difficult the work.

I have never been unsuccessful in work related to my specialty, “deep drawing”(i.e., a metal working process in which thin sheet metal is formed into a seamless cylinder such as a ballpoint pen, a lipstick holder or an aluminum can). A pull-tab aluminum can with a larger opening (like the can on the left in the photo) was invented by me. I can give you some tips. No matter how much I seem to be repeating a never-ending cycle of failures, I never give up, at any cost, until I achieve success. Just because I never gave up, nothing was ever impossible when my work involved deep drawing.



Aluminum products can developed by means of “deep drawing”

### **What gives you joy as an inventor/researcher?**

Young people today often seem to be lazy or to lose spirit before making their appearance on the grand stage, saying, “I’m going to wait and see what results I get in the next three years or so,” so they easily quit their jobs if they get poor results.

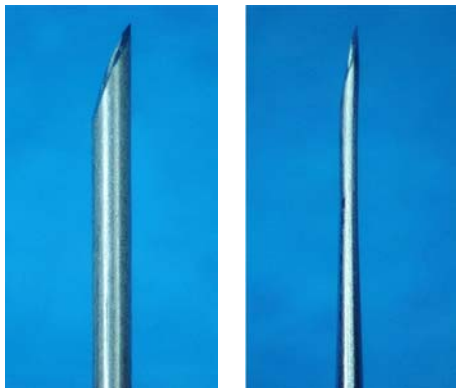
This not the proper attitude for living a successful life, so individuals with such an attitude will necessarily pay the price. I believe that it is important that a person chooses his profession because it is what he wants to do, not because of salary. You must persue what you are looking for and make your life what you want it to be.

Money, fame and power, which are all uncertain and transient, capture people's minds. It’s like drinking. As you lose them, you live in agony with a massive hangover.

I feel happiest when I have accomplished what has been considered impossible. I enjoy the greatest sense of fulfillment when I have been able to do what others have failed to do even with much effort.



The sharpest “painless (insulin) injection needle” in the world developed by Mr. Okano together with Terumo



Diameters: The typical injection needle for immunization (left) has a diameter of 0.4 mm, whereas the “painless injection needle” (right) has a diameter of 0.2 mm.

### **What message would you like to give to the next generation?**

Success in the workplace is not always about your ability but about how you behave. In the workplace, your relationship with people is the top priority, and those who are not trusted by others cannot get much work done. The bottom line is that being well-liked is far more important in your life than being able to solve a differential-integral equation.

Indeed, God is great, but I believe that those who are industrious are capable of doing more than God. People say that Jesus healed the sick and transformed a glass of water into wine; that is, he performed miracles.

God can perform miracles. At the same time, people can grow grapes in a vineyard. Just as God can heal diseases, people can treat patients.

It is very obvious that industrious individuals can achieve accomplishments beyond God's miracles. Therefore, I believe that people should pursue professions that they enjoy.. In other words, if you choose a profession that you do not enjoy, you will perform your work half-heartedly and go nowhere.



At his workshop crammed with long-used machines and tools