

# Visit to Sake Brewery in Mie Prefecture

IEEE Nagoya Section Young Professionals Affinity Group

## 1. General Information

We visited KANKOBAI SHUZO, which is a sake brewery in Mie Prefecture.

- DATE: 14:00-17:00, July 29<sup>th</sup>, 2018.
- ADDRESS: 433, Kurimanakayama-cho, Tsu-City, Mie Pref., 514-0103, Japan
- PARTICIPANT: 8 IEEE members.



**Fig. 1 KANKOBAI SHUZO Entrance.**

## 2. Greeting Brewery Director

A brewery director, Mr. Masuda, welcomed us and introduced KANKOBAI SHUZO. KANKOBAI SHUZO makes sake named KANKOBAI and provides sake making experience to students of Mie University.



**Fig. 2 Collaboration products with Mie University.**

Mr. Masuda said that sake making is engineering. He thinks that sake brewery is managing biological resources like agriculture. The important thing in sake making is temperature control, and water is necessary for its temperature management. Additionally, engineering such as pumps are used for transporting the water. He said that to manage it requires engineering.

## 3. Facility Tour

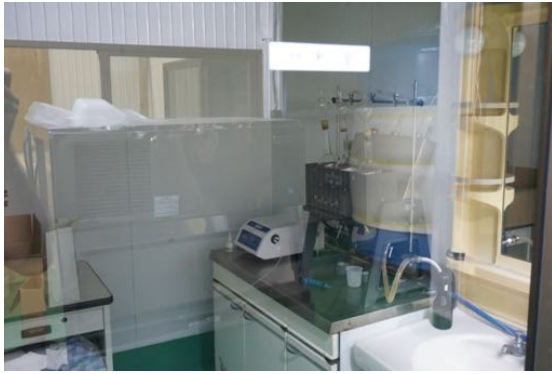
Mr. Masuda took us into sake brewery.



**Fig. 3 Sake tanks.**

Fig.3 shows sake tanks. Each tank is wrapped with a white cloth, and a pipe through which cooling water passes and a temperature sensor are sandwiched between the tank and the cloth. By using a machine such as pipes and sensors, staff of sake brewery can manage sake automatically with accurate control. Thereby, each staff of sake brewery can concentrate on process requiring manual work in sake making.

Staff analyzes sake using the analyzer. By quantifying the ingredients of sake, staff can know the best shipment timing of sake.



**Fig. 4 Sake analyzer.**



**Fig. 5 Squeezing machine.**

Fig.5 shows a new machine to squeeze sake. It is necessary to squeeze in the final process of sake making. Since the squeezed sake lees generates odor over time, it is desirable to remove it quickly, or to operate the squeezing machine constantly to prevent the occurrence of smell. Mr. Masuda is considering ingenuity to constantly operate the machine by using a small squeezing machine.



**Fig. 6 Mr. Masuda explaining sake making.**

#### 4. Tasting

We tasted sake such as prototypes after seeing the sake

brewery.



**Fig. 7 Sake we tasted.**

Fig.7 shows three kinds of sake: The green bottle is the sake that left the gas, the bottle in the middle is the sake which made the fragrance stronger, the bottle in the left is the sake with alcohol lower than the standard. While experiencing the difference of each sake, we learned from Mr. Masuda about the culture of modern sake.

#### 5. Conclusion

The sake brewery we visited was making sake using engineering. We knew how engineering is helping to make sake and what kind of technology is required. So, we think that participants of sake brewery had a nice time as a researcher.



**Fig. 8 Group photo.**

#### Acknowledgments

We would like to thank Mr. Masuda who gave us a wonderful guide just after typhoon passage.