

Dr. Sue-Huai Gau' s Team Dominates the Green Circular Innovation Technology Research Competition

學校要聞

The project professor of the Department of Water Resources and Environmental Engineering Dr. Sue-Huai Gau led his team to participate in the "2020 Green Circular Innovation Technology Research Competition," and defeated more than 30 teams to win the championship with the "R&D of high-value ceramic filter membrane made from waste incineration ashes." Dr. Sue-Huai Gau mentioned that the issue of waste incineration flying ashes has been under discussion for more than 20 years. The project has been approved by the Ministry of Education to subsidize the university's industry innovation plan for the three-years research and development period. Under expectations, we won the championship and it helped us developed more confidence in resource utilization.

For more than 30 years, incineration gradually became the mainstream of urban garbage disposal worldwide, but ashes caused by incineration became much more difficult to deal with. Thus, Dr. Gau devoted himself to the research and development of flying ash treatment and utilization, and successively obtained several domestic and foreign invention patents. In recent years, he obtained two gold medals and two silver medals at the Taipei and Tokyo International Invention Exhibition. Dr. Sue-Huai Gau explained that the ceramic filter membrane is further improved based on the previously developed humidity control ceramic technology. It can be used for civil sewage and industrial wastewater treatment and the wastewater during the process may be converted into hypochlorous acid water which may be used for environmental disinfection. If the product may not perform the filtering function, it may also recycle the raw materials used to make new products, thereby achieving the circular economy goal of "Zero pollution, Zero waste, and Zero emission." This product uses incineration flying ashes as the main raw material and the production cost is lower than that of

commercially available products, which is a favorable condition for marketing. Dr. Sue-Huai Gau is confident to promote this product as it will eventually become the mainstream of the future market.

The award-winning team composes both master and doctoral students from the Department of Water Resources and Environmental Engineering. Dr. Sue-Huai Gau mentioned that their ability to defeat other institutions to win the championship affirms the research and development capabilities of the university's faculties and students and this also encourages students to have more confidence. Under the guidance of experienced faculties, as long as one works hard, one may obtain great results. He mentioned that in addition to continuous technical improvements, the team also hopes to obtain preferences in price and market. In the future, it plans to commercialize ceramic filter membranes and will continue to use humidity control ceramics and other multiple incineration flying ash resource products for research and development, contributing to the environmental recycling economy goals.

