
The 18th KONA Award

Dr. Minoru Takahashi, the executive director and vice president responsible for academic and evaluation affairs at Nagoya Institute of Technology (NIT), has been selected as the winner of the 18th KONA award. The award is sponsored by Hosokawa Powder Technology Foundation and given to the scientist(s) or group(s) who have achieved distinguished research work in the field of particle science and technology.

He received BS degree in 1973, MS degree in 1975 from mineral resources development engineering, and doctor of engineering in 1984 from the faculty of engineering in the University of Tokyo. He joined Ceramics Research Laboratory (CRL) in NIT as an assistant professor in 1975, and was promoted as a lecturer in 1986, an associate professor in 1987 and a professor in 1994. He took responsibility as the director of CRL from 2001 to 2002, and was appointed as the vice president of NIT in 2004 and has been in the current position since 2006. Prof. Takahashi has been elected as the new president of NIT. His term starts in April 2010.

For more than three decades, Dr. Takahashi has been engaged in the research of ceramics processing involving powder forming as the major subject at NIT, which is one of the excellent centers of ceramics researches in Japan. Excellent research achievements including a good number of lectures which Dr. Takahashi was invited to give at international conferences as well as scientific papers published in famous journals reveal that he is a world leading researcher in this area.

The style of his research is to find out the relationship between preparation of raw materials and forming characteristics both in experimental and theoretical approaches. His researches cover most of industrial forming processes such as die-pressing, extrusion, injection molding, slip casting and tape casting. In addition to the conventional forming methods, he tried the gel casting as a new forming method. He also developed a novel characterization method for a direct observation of particle dispersion structure in the slurry. The principle of this method is just to observe a thin slice of gelled slurry on an optical microscopy.

In recent years, Dr Takahashi has developed novel materials and new powder synthesis processes. For one example, electrical conductive ceramics have been successfully fabricated by combination of inert sintering and gel casting, converting polymer network in a gelled body to nano-carbon network. The conductivity could be controlled in a wide range depending on sintering atmosphere and temperature. Also he has developed unique and simple process called "bubble template" to synthesize hollow CaCO_3 particles. The hollow particles could be precipitated by reaction of CO_2 bubbles with a CaCl_2 solution.

Based upon Dr Takahashi's research achievements briefly described here, he was nominated as a candidate and finally selected as the winner of the 18th KONA award. On January 29, 2009, Mr. Masuo Hosokawa, President of the Foundation, handed the 18th KONA Award to Dr. Takahashi at the presentation ceremony held at Hosokawa Micron Corporation in Hirakata.

