The Letter from the Editor

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As the Chair for the Editorial Board of the Americas, I am honored to share my thoughts with you on powder and particle technology opportunities and challenges.

First of all, I would like to express our profound sadness and sincere condolences to the families of the people across the globe that lost their lives in the recent disasters, particularly the people of Japan who are enduring extremely difficult times as a result of the recent Tsunami and earthquakes. Coping with natural disasters is never easy, however, technological innovation in several areas, including powder and particle technology, are playing a critical role in helping future generations deal with such disasters more efficiently. Predictive methodologies and sensor technologies are advancing, and eventually it will be possible to minimize the loss of human life with early warning of impending natural disasters. Furthermore, discoveries, innovations and technology advancements are taking place to enhance the resilience of materials which promises to minimize the loss of life and damage to infrastructure upon exposure to sudden changes in the environment. Rapid response technologies to provide immediate assistance to victims are being

developed that do not require conventional sources of energy. Minimizing the healthcare risks through deployment of appropriate mitigation technologies remains a high and immediate priority for surviving communities.

Powder and particle technology are currently utilized, and are inherent, for innovation and design of sensors, nano-composites, solar-cells, water-filtration and resilient materials, which are critical for early warning of disasters, minimizing damage during disaster and providing immediate assistance after the disaster. However, the knowledge of powder and particle technology is diffused in several fields with a drastic decrease in core competency in powder and particle technology. The academic and industrial leaders in powder and particle technology should make an effort to develop educational resources and attract the scientists working in several advanced materials areas to specifically address the necessary technological advances.

Globally, powder and particle technology remains strong, largely due to the economic growth in Asia. New wealth creation is leading the improvements in the quality of life in China, India, Brazil and other developing countries. Similar growth is noted in other parts of the world, with increasing demand for powder and particle mediated products. So it is no surprise that the powder and particle industry continues to gain importance in the developing economies. Overall, despite the challenges faced by western economies, powder technology is recognized as an essential business with great global opportunity.

New equipment developments constitute major technological advances in the powder and particle industry. However, transformational changes are needed to go beyond the advances in equipment design and the integration of mechanization and automation.

Producing the next generation of scientists and engineers to support the powder and particle industry is among our most significant challenges.

Unfortunately, with a few notable exceptions, powder and particle engineering education is in a weaker condition nationally and internationally mostly due to availability of financially more rewarding and seemingly more glamorous professional options to younger people. With shrinking science and engineering enrollments and faculty sizes viability of a number of powder and particle technology courses is at risk around the world.

Lack of awareness of the importance of particle technology, beyond the academics and industry practitioners who are directly involved, makes it harder to recruit talented students to the field. Shortage of research funding further compounds this problem. Companies should help by offering scholarships and internships to students who are interested in powder technology research. They should also emphasize to university administration about the strategic importance of powder and particle technology as the society moves forward. Furthermore, industry and professional society leadership can meet with national funding agencies and convey the importance of public-private partnership in maintaining a viable education and research infrastructure in this important field.

Globalization and outsourcing are inspiring curricular changes that emphasize individual as well as interdisciplinary learning and promote an understanding of the ethical, social and business aspects of the profession along with a geopolitical understanding of the industry. Innovations in education can be motivating in attracting students. With information technology advances, it may be attractive to develop joint powder technology-related education programs involving a consortium of universities.

Overall, I believe it is a time of unique opportunity for revitalizing, if not reinventing powder and particle technology education. Diverse international partnership opportunities in research and education can provide the platform for not only sustaining education but also to capitalize the teaching excellence and practice experience across countries. Powder and particle technology professional societies can provide a vital link for establishing and implementing global education and training partnerships.

Public education and awareness is a challenge and opportunity and particle and powders technology community should increase their participation in public forums. They may also consider making charitable contributions to educational institutions. No gift is more significant than the gift of education. A strong powder and particle technology community would be a fitting legacy to the founder of KONA -Mr. Masuo Hosokawa's visionary contributions to the field.