

23<sup>rd</sup> International Conference on **Advanced Materials**  
June 20-21, 2018 Oslo, Norway

10<sup>th</sup> International Conference on  
**Chemistry Education and Research**  
June 21-22, 2018 Oslo, Norway



## Manabu Sumida

Ehime University, Japan

### Changing trends in chemistry research modes and the imperative needs of chemistry education for gifted students

Chemistry has been experiencing dramatic changes since the beginning of the twentieth century. The enterprise is diverse and complex, and it involves international collaboration. However, the trends in modern chemistry do not seem to be reflected in education, although many children show a strong interest in natural phenomena from an early age and demonstrate an outstanding ability to think creatively and in abstract terms. This presentation summarizes the global trends in Nobel Laureates in Chemistry from 1901 to 2012 in order to illustrate how giftedness in chemistry is a requirement for the new century. This presentation proposes different chemistry education modes for gifted students in formal and informal settings. Some of Ehime University's special gifted education programs, which deal with identification, curriculum development, practice, and assessment, are introduced as case examples of chemistry education for the gifted. This presentation also analyses the effects of special education programs and discusses the similarities and differences between their effects on gifted students and regular students. The development of chemistry curricula and teaching materials that accommodate the special needs of gifted students and the implementation of related teaching methods and assessments are relevant to all teaching subjects, school types, and education in general. Moreover, they can be used in the educational activities of communities and societies around the world.

### Biography

Manabu Sumida is a Professor of Science Education at the Ehime University in Japan. He holds a BA in Chemistry from Kyushu University and PhD in Science Education from Hiroshima University. He was a Visiting Researcher at the University of Georgia in 1998 and Visiting Scholar at the University of Cambridge in 2012. He has been the Director of Kids Academy Science (a special science program for gifted young children) for nine years. He is currently the Director of Japan Society for Science Education and Regional Representative for Asia of the International Council of Association for Science Education.

[sumida.manabu.mm@ehime-u.ac.jp](mailto:sumida.manabu.mm@ehime-u.ac.jp)

### Notes: