

Niigata University and AGC Commence Industry-Academia Collaboration to Improve Safety Management of Manufacturing Sites

—Aiming to create a safe and secure plant environment and achieve efficient and effective safety management—

Niigata University

AGC Inc.

Tokyo, June 8, 2021,-Niigata University (President: Tatsuo Ushiki) and AGC Inc. (Headquarters: Tokyo, President & CEO: Yoshinori Hirai) hereby announce a significant expansion of their joint research agreement on safety culture that they have been working on since 2020, and to start the following two industry-academia collaborations aimed at improving safety management of manufacturing sites from July 2021.



Description of activities

- **The safety culture assessment which started in April 2020, to improve the AGC Group's safety management level, will be significantly expanded in scale and implemented from December 2020.**
- **As part of the joint research, the following two industry-academia collaboration activities will be launched in July 2021.**
 - (i) Development of highly skilled dedicated personnel responsible for safety management**
 - Implementation of problem-solving projects involving graduate students
 - (ii) Cooperation in education at undergraduate and graduate schools**
 - Dispatch of AGC employees as lecturers

Niigata University is conducting research on organizational improvement using safety culture assessment*¹ methods and other analysis, based on the concept that "To prevent accidents at manufacturing sites, it is essential to establish a safety management system, in addition to the efforts of individuals." In June 2020, AGC entered into a joint research agreement with Dr. Akira TOSE of Niigata University (Associate Professor, Engineering Management Program, Faculty of Engineering/ Social Systems Engineering Course, Advanced Materials Science and Technology

Department, Graduate School of Science and Technology), aiming to realize safety at manufacturing site, and has adopted safety culture assessment as a means of monitoring its safety culture.

The scope of this joint research started with 21 sites and 6,000 employees in Asia including Japan in the AGC Group, and have been expanded to 56 sites and approximately 30,000 employees in December 2020 to improve safety management in a wider range of sites. In addition, AGC has fully cooperated in the multilingualization of the safety culture assessment (translated versions in Chinese (simplified and traditional), Korean, Thai, Indonesian, Vietnamese, etc.), and is jointly promoting implementation of assessments and improvement activities at AGC sites throughout Asia. This is the first time for Niigata University to conduct such organization-based joint research*² outside of the medical field. In the course of these efforts, AGC agreed in December 2020 to expand its activities beyond joint research to include comprehensive industry-academia collaboration, and will begin such activities in July 2021.

Details of the activities to be conducted through this industry-academia collaboration are as follows.

(i) Development of highly skilled dedicated personnel responsible for safety management (implementation of problem-solving projects involving graduate students)

As a new initiative to develop human resources for safety management, graduate students of the Social Systems Engineering Course of the Advanced Materials Science and Technology Department, newly established this spring at the Niigata University Graduate School of Science and Technology, are also participating in this project. The initiative aims to develop advanced human resources with a strong background in safety management by addressing issues that arise in the real world. As part of the course's "Project Research in Social Systems Engineering" (equivalent to master's research), AGC will accept students into the company, and AGC employees and Niigata University faculty and students will work together on the research.

(ii) Cooperation in education at undergraduate and graduate schools (dispatch of employees as lecturers)

AGC employees will serve as lecturers to help educate students in courses offered by Niigata University's Faculty of Engineering and Graduate School of Science and Technology (such as the graduate-level course, "Risk Management"). AGC aims to achieve education through in-depth collaboration between universities and industries by providing education based on practical experience and real-world case studies from companies to students of universities and graduate schools in collaboration with faculty.

These efforts are being developed in collaboration between Dr. Akira TOSE of Niigata University (Associate Professor, Graduate School of Science and Technology) and AGC's EHSQ General Division. Niigata University aims

to "create innovation by combining the knowledge of industry and academia" in its Niigata University Future Vision 2030 for industry-academia and regional collaboration. Through systematic promotion of industry-academia collaboration, the university will actively promote the societal implementation of "new knowledge" that transcends the humanities and sciences produced by universities, and contribute to the creation of industrial and social innovations that will give birth to a prosperous future society.

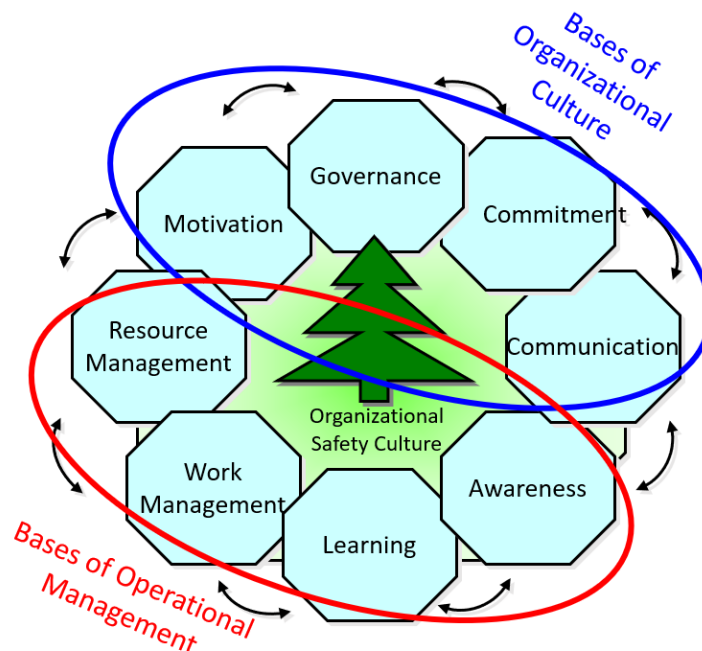
Under its **AGC plus 2.0** management policy, the AGC Group aims to add a "plus" by providing safety, security and comfort to society. With safety as the premise of our business activities, AGC will continue our efforts to create comfortable workplaces and contribute to society by improving our safety culture.

Niigata University and AGC will continue to promote various collaborations with the aim of creating a safe and secure plant environment and establishing efficient and effective safety management systems.

Reference

*1 About Safety Culture Assessments

8-axis model of organizational safety culture



In 2009, a team led by Professor Kenichi TAKANO of Graduate School of System Design and Management, Keio University (currently, Research Advisor, System Design and Management Research Institute, Keio University), and Dr. Akira TOSE of Niigata University (Associate Professor, Faculty of Engineering) started to develop an assessment method for safety culture that enables the evaluation and visualization of safety culture at plants with large-scale facilities, mainly in the petroleum and chemical industries. By benchmarking the responds from employees working at manufacturing sites to a 110-question questionnaire created based on an 8-axis model on safety culture to the

industry average, the assessment can determine an extensive range of the strengths and weaknesses of each manufacturing site with the aim of improving safety culture. In this joint research, Niigata University will conduct this questionnaire as an independent entity and investigate the real conditions of safety culture at manufacturing sites while protecting the anonymity of the respondents. AGC is working to improve its safety culture based on the results of the feedback obtained. In addition to Japanese, the questionnaires are also available in English, Chinese (simplified and traditional), Korean, Thai, Indonesian, and Vietnamese.

***2 About organization-based joint research**

Niigata University is working to expand full-scale joint research of "organization" to "organization" based on the "Guidelines for Strengthening Joint Research through Industry-Academia-Government Collaboration (November 2016: Ministry of Education, Culture, Sports, Science and Technology and Ministry of Economy, Trade and Industry)" and the "Medium- to Long-Term Action Strategy for Expanding Joint Research with the Private Sector and Other Organizations at Niigata University (December 7, 2017, Dean's Decree)." Niigata University defines "organization-based joint research" as "full-scale joint research" from organization to organization which it proactively supports. At the same time, the personnel expenses of faculty members involved in joint research and the amount equivalent to the added value of their intellectual contribution will be booked as "expenses for strengthening industry-academia collaboration" and thus be used to fund efforts to enhance industry-academia collaboration and educational and research activities at the university.

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