

## Chemistry Chat

### Encouragement of Research (Part 2)

– Output of Research Results –

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As you proceed with your research, you will obtain some results. It is said that your research has not been completed until outputting the obtained results. For researchers in universities, it is done through publication in a scientific journal or presentation at an academic conference, and for researchers in companies, through a patent or commercialization. If you do not do output, you may be considered to have done nothing even if you have actually conducted research.

### Article

When you do a web search on the theme of “what it means to be an adult,” you will find a great variety of expressions ranging from “someone who can earn money on one’s own” and “someone who can take responsibility for one’s own life” to “someone who can accept giving up” and “someone who is a younger idol making one’s debut”. If it is considered from the standpoint of chemistry, it could be expressed as “a person who can reduce entropy”. As infants, it is their job to make a mess, but as they grow up, they are able to clean up after themselves. In this sense, people who have messy rooms and desks may not be fully grown up yet. **I instruct my students to always keep things in order.** This is because organizing lab benches, notebooks, samples, spectral data, computer desktops, etc., will help them organize their minds and see what they should do next with their

priorities.

Some faculty members cannot write papers even though they often give conference presentations. In the latter case, divergence is allowed to a certain extent. On the other hand, when it comes to writing a paper, it is an endothermic process because it is in the direction of lowering entropy, and a lot of energy has to be expended. That is why papers account for such a large percentage in the evaluation of research achievements. Although it is better to publish a paper in a journal with a high impact factor, it is worthwhile to summarize your work as a paper. To use a baseball analogy, a home run and a run from an infield hit are both runs. It is good to always aim for a home run, but it is also good to take the attitude that a long ball is an extension of a hit.

### Conference

Giving a presentation at a conference is a good opportunity to organize your data and mind as you are in the process of writing a paper. You can also gain new insights through questions and discussions with participants. It is needless to say that such a process will

be useful for preparation of the paper in the near future. However, academic conferences have other roles as well. In other words, they are places for networking and self-promotion.

By meeting with each other at conferences, we can

build deeper human relationships. Indeed, on the basis of my own experience, there have been times when it has led to collaboration, and when I have received help and cooperation in places unrelated to academic conferences. There have also been times when I have asked for employment for the students I supervise. As I get older, I realize that there is only so much I can do by myself, and the importance of meeting people at conferences becomes more apparent to me. In the last two years, conferences are now held online due to the pandemic, and I think many people may feel sad that the function of conference as a meeting place is diminishing.

For young researchers, academic conferences are a place for self-promotion. You should not only present

your own research, but also actively ask questions at the presentations by other people. Audiences on the floor do not actually remember what kind of questions you asked, but they will remember who asked the question. Indeed, one of my students, who often asked questions, was scouted as an assistant professor by a professor from a university with which he had no connection.

Even at a small conference, it is important to show your best performance. I myself was asked by a professor on the floor to write a review article and to edit a book. Even though you are in a less fortunate research environment, if you work hard, there will always be someone who will see and appreciate your efforts.

## Author Information



**Professor Nagatoshi Nishiwaki** received a Ph.D. in 1991 from Osaka University. He worked in Professor Ariga's group in the Department of Chemistry, Osaka Kyoiku University, as an assistant professor (1991-2000) and associate professor (2001-2008). From 2000 to 2001, he was with Karl Anker Jørgensen's group at Århus (Aarhus) University in Denmark. He worked at the Center for Collaborative Research, Anan National College of Technology as an associate professor from 2008 to 2009. Then, he moved to the School of Environmental Science and Engineering, Kochi University of Technology in 2009, where he has been a professor since 2011. His research interests comprise synthetic organic chemistry using nitro compounds, heterocycles (synthesis, ring transformation, 1,3-dipolar cycloaddition, application as tools in organic synthesis), pseudo-intramolecular reactions.