Inside the Institute of Electrical Engineers of Japan, abbreviated as IEEJ in this article, there is an organization called the Investigating R&D Committee, whose task is to search the status quo and future trend of research and development on a specific technology or topic relating to electrical engineering. As of June 15, 2018, a total of 125 such committees are conducting activities to pursue the objective of each committee in various fields within the scope of IEEJ.

For three years, from July 2015 to June 2018, the Investigating R&D Committee on Advancing Tailor-Made Composite Insulation Materials (TMC) was set up inside the Technical Committee on Dielectrics and Electrical Insulation (TC-DEI). The chair of the TMC Committee was Toshikatsu Tanaka (Figure 1) of Waseda University. Here, “composite” means a solid material in which an inorganic filler or fillers is added as a guest to a host insulating polymer such as polyethylene and epoxy resin. Since around 2000, nano-composites, namely, composites composed of guest inorganic fillers with sizes less than around 100 nm and host polymers, have received much attention as attractive insulating substances that can improve various dielectric and electrical insulation properties. Although Tanaka is already officially retired from Waseda University, he is still very active. As a regular activity as the chair of the TMC Committee, he convened four meetings annually or a total of 12 meetings during the three-year period. In addition to this regular work, he introduced many new, active, and challenging activities to his committee. Digital publishing of the TMC Newsletter is one of these activities. Figure 2 shows its first issue. It was named No. − (minus) 1 issue and was published electronically in April 2015. Since then, a total of 36 newsletters, inclusive of No. −1 and No. 0, were published monthly until No. 34 issued in June 2018. Every newsletter is composed of five articles: message from the chair, Twitter from a member, paper of the month, techno-scrap, and activity and meeting calendar.

Figure 1. Toshikatsu Tanaka of Waseda University.

Figure 2. First issue of the TMC Newsletter, named No. − (minus) 1, published electronically in April 2015 (with the permission of IEEJ).
The second activity that should be reported here is that the TMC Committee held several special seminars. On November 10, 2016, the first special seminar was held. Linda S. Schadler of Rensselaer Polytechnic Institute gave her talk with a title of “Polymer Nanodielectrics—The Development of a Design Approach” as a special invited speaker of this symposium. Figure 3 is a picture taken on that occasion.

Besides the above symposium, the TMC Committee held two more symposia. The first one was held as a special activity affiliated with the Eighth International Symposium on Electrical Insulating Materials (ISEIM), Toyohashi, September 12 to 15, 2017, on the day before the opening of the 8th ISEIM. Nine members of the committee, including the chair, T. Tanaka, were the lecturers. At this symposium, the lectures used a book [1] titled “Advanced Nanodielectrics—Fundamentals and Applica-
Before the TMC Committee, T. Tanaka set up three Investigating R&D Committees with similar scopes: the first one from October 2002 to September 2005 [2], the second one from February 2006 to January 2009, and the third one from April 2010 to March 2013. The first and second committees published IEEJ Technical Reports [3], [4], shown in Figure 5, as main outcomes of the activities, and the third committee published two books. The first book written in Japanese was published in August 2014, and the other, which is a translation version into English of the first book, was published in May 2017. Figure 6 shows the front cover of the Japanese book [5], and Figure 7 shows the front cover and contents of the English book [1], “Advanced Nanodielectrics—Fundamentals and Applications.” As can be seen in Figure 7, the two books provide detailed information on various aspects of polymer nanocomposites, from their manufacturing processes to various properties and applications. In addition to these Japanese and English versions, the book is now being translated into Chinese.

The IEEJ awards several technical reports every year, mainly based on the quality and sales of each book. The two technical reports published by the first and second nanocomposite-related investigating committees were awarded in May 2008 and May 2010, and the Japanese book was also awarded in May 2016. This is outstanding. Moreover, IEEJ recently awarded the IEEJ Outstanding Contribution Award to the most recent fourth committee for its truly outstanding achievements, typically featured by the previously mentioned various unique and valuable activities.

Figure 8 shows the award certificate, which was delivered to the members of the fourth committee at the annual general assembly meeting of IEEJ on May 31, 2018. It reads, “The IEEJ certifies that the Investigating R&D Committee on Advancing Tailor-Made Composite Insulation Materials has been awarded the IEEJ Outstanding Contribution Award for its issue of the English translated book “Advanced Nanodielectrics: Fundamentals and Applications” of the original IEEJ Technical Report and Success of Related Workshop in ISEIM 2017.”

This article was completed with the help of Masahiro Kozako of Kyushu Institute of Technology and Takahiro Imai of Toshiba Energy Systems and Solutions Corporation.

References