

Activities of the MEMS System Development Center

Initial Release of MEMSPedia Developed in the Fine MEMS Project

The Highly Integrated, Complex MEMS Production Technology Development Project (2006–2008) commissioned and subsidized by NEDO produced significant achievements before coming to a conclusion last year. In this project, commonly referred to as the Fine MEMS Project, the Micromachine Center (MMC) compiled a knowledge database on fine MEMS and developed a fine MEMS integrated design platform aimed at increasing the support and expanding the base of researchers and engineers involved in the development and manufacturing of advanced MEMS. Both the fine MEMS knowledge database and the MEMS equivalent circuit generator developed in this project were made available on the MMC's Web site on June 8 of this year as MEMSPedia.

By the end of March 2009, the MEMS System Development Center had compiled more than 1,500 items of data in the fine MEMS knowledge database from such sources as R&D findings (research data, scientific knowledge, and documentation) of participants (commissioned and grant-funded) in the fine MEMS project, R&D findings from re-commissioned university studies, and presented papers and technical literature collected by the MMC at academic conferences in Japan and overseas.

The Center also reviewed Japanese unexamined patent applications, patents registered in the U.S., and PCT applications as far back as the year 2000 and entered patent information related to this project in the database.

The MEMS equivalent circuit generator is a design tool capable of presenting MEMS devices and electronic circuits in the form of equivalent circuit models. There has been an increase in R&D activity on the integration of MEMS and electric circuits and on integration through combinations of different types of MEMS. As more successful products emerge through this research, the MEMS equivalent circuit generator will provide a new design tool capable of assisting MEMS and electronics engineers in designing devices.

Research and development on the fine MEMS integrated design platform conducted between 2007 and 2008 produced a Web library of MEMS equivalent circuits that stores integrated circuit models for various devices studied in the project, and netlists that can be used in a circuit simulator.

We have made these tools available on the Internet as an encyclopedia that includes knowledge data, design support tools, and a variety of open content in the hope of effectively disseminating this knowledge while encouraging others to expand the information. We hope you will use MEMSPedia.



MEMSPedia: fine MEMS knowledge database



MEMSPedia: MEMS equivalent circuit generator