

MEMS in the Future: A Baby Boomer's Symbiotic Relationship with MEMS

On a clear autumn day in the year 202X, an elderly baby boomer (let's call him "Mr. A") went to the nearby botanical garden with digital camera in hand, intent on taking a seasonal photograph of autumn leaves to post on his blog (which is entitled "Boomer Avenue"). Not only was strolling around the botanical garden pleasant, the negative ions emitted from the trees made it a healthy "forest bathing" experience. Mr. A had lived this lifestyle for the past dozen years or so. Perhaps this was the reason that he remained in excellent health despite being almost in latter old age; he took pride in contributing in some small way to reducing the nation's overall medical care costs.

During the latter part of his career, Mr. A had been involved in the industrial development of MEMS (miniature sensors and other electromechanical devices).

Accordingly, in addition to photographs of natural scenery, Mr. A's blog also featured many posts on industrial technology relating to MEMS. For the benefit of those who have not read them, here are a few of the interesting posts on his blog.

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More than a decade ago, around the beginning of the project to develop the technology to manufacture Bio Electro-mechanical Autonomous Nano Systems (BEANS), the MEMS of the future, a financial crisis precipitated by the U. S. subprime loan debacle spread throughout the entire world in the blink of an eye. This crisis dealt a major blow not only to the U. S., Great Britain and other developed countries but also to the economies of newly developing countries that up to that time had experienced overheated economic growth. It was many years before the world economy was once again stable.

Although the Japanese economy was of course affected, it did not sustain serious damage. This was partly due to the fact that it was not the direct epicenter of the financial crisis. But I feel it was also due to Japan's outstanding industrial technology such as MEMS. We had learned the lessons from the collapse of the "bubble" economy, and most Japanese companies had conducted sound management that placed great value on technology. The national government, too, had established a roadmap for industrial technology in key technical fields such as MEMS, nanotech materials, biotechnology and robots, and had provided technical development assistance.

The subsequent course of events demonstrated the strong international competitiveness of Japan's manufacturing sector, based on its firm technological footing. The Japanese economy recovered rapidly, and now other countries once again look to Japan to drive the world economy. As someone who has been involved in promoting technical development projects and providing assistance for industrialization in the MEMS field, this makes me very happy.



(Date: _____)

The development of MEMS in recent years has been nothing short of remarkable. Great strides have been made in the creation of fine MEMS such as various types of sensors and RF-MEMS for telecommunications. Vehicles, cell phones, information processing equipment and other units are now chock-full of highly integrated MEMS devices with advanced functions, and they have dramatically improved the convenience of our daily lives. Products equipped with fine MEMS devices bear a "MEMS Inside" sticker, and "MEMS Inside" is now a synonym for high performance and high quality.

My trusty digital camera also has a "MEMS Inside" sticker. The lens and other optical system components of the digital camera are still the same as before. But as soon as the camera is turned toward an object, all of the outstanding functions – blur prevention, autofocus, macro photography and so on – are fully automated through the power of MEMS. This allows me to take one outstanding photo after another with next to no effort. As a result, even though I am older and not as steady as I used to be, I can still easily post stunning photographs of the seasons on my blog. This is a blessing beyond compare.

What's more, many other products are increasingly incorporating MEMS technology recently. To reduce energy consumption and environmental load in the product development process, the trend is toward the use of smaller and smaller electronic and mechanical components and three-dimensional IC chips, and MEMS ultra-fine processing technologies are increasingly being employed in these industrial fields as well.

Furthermore, the revolutionary BEANS technologies that were developed in the BEANS manufacturing technology project and are designed to help create the MEMS of the future have been provided by a patent pool agency administered by the MEMS Industry Forum. I understand that companies in the health and medical care field and various other industries are vying with one another to adapt BEANS technologies for product development. I can't wait to see what kind of new products appear in the months and years ahead. For me, the key thing will be to live as long as possible so I'll be around to see them.

After returning from his stroll in the botanical garden, Mr. A felt thoroughly refreshed in both body and spirit by the two hours of "forest bathing." But he was also a bit agitated. It was his custom to place his hand and ear against the trunk of an enormous tree in the botanical garden, in an effort to communicate with the tree. But this time he had felt as if he could actually hear some kind of message from the tree. Immediately he ordered a MEMS kit from the MEMS Mall (an online store for MEMS products). The kit was designed to make special recordings and was equipped with an automatic translation function. Using this kit would enable him to post his conversation with the tree on his blog. In this way, Mr. A, the boomer, seems likely to continue his symbiotic relationship with MEMS forever.

By Boomer, B