

The discovery of Electron Spin, Spintronics products and Taiwan

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Abstract: In the early 20th century, electron spin was discovered. It takes another 60 years to make its first major impact to our life. I believe its next impact to our life will happen in early 21th century as we begin to incorporate electron spin properties into our Silicon product – Spintronics product.

In the 1990s, the first product was introduced. It employing Giant-Magnetoresistance Effect (GMR) to further raise the data recording density of the magnetic disk drive. Today, storing data in magnetic recording devices is cheaper than in paper.

I believe the next step is to integrate magnetics directly into the ubiquitous Silicon product. When we succeed, it will be a game changer to the entire information technology industry and our life.

When we introduced Silicon industry into Taiwan 40 some years ago, we knew little about how to manage Silicon factory. We were in a catchup mode and learned from foreigners. This time, we are much better positioned: we have a strong Silicon industry infrastructure. We have built a base in Spintronics, both in people asset and manufacturing knowhow. I believe that the 21st century will be a Spintronics era, and God willing, we can make compete globally.

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