

DKN Research Newsletter

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Powerful Magnitude Earthquake Hits Japan

Last Saturday, my family and I reminisced about the Great East Japan Earthquake that happened almost ten years ago. Later that night at about 11:00 PM, my cell phone rang with an emergency alert, just as my house started to shake. The house shook for more than 20 seconds! The news reported that the seismic center was very close to the same location nearly ten years ago, but the magnitude was two grades lower at 7.3. Several towns in Fukushima Prefecture and Miyagi Prefecture experienced strong earth tremors that measured over 6 points on the magnitude scale (that's strong enough to bring down buildings).

I was staying Chiba Prefecture, the east side of Tokyo, where the earthquake measured a 4 magnitude. Fortunately there was no damage to homes and buildings, but I quickly grew concerned for my family living in Tome, Miyagi. This was my hometown and The Great East Japan Earthquake caused serious damage. Ten years ago it took three weeks to contact my family, but this time I contacted all of them within one hour (everyone was safe).

The next day, images and videos rolled across new stations. The Tohoku Shinkansen (Bullet train) suffered serious power supply damage and ceased service for more than a week. The highway in Fukushima closed due to landslides, more than 100,000 homes lost power and public water services were disrupted. Power was restored within two days and water flowed within 4 days.

Cities and towns ramped up their evacuation shelters with foods and water. The consumer goods supply chain was compromised, but restored quick enough to meet emergency needs. More than 150 people were injured from the earthquake, and no one was killed.

Structural damages were minimal compared to the disaster ten years ago, and there was no tsunami (I have lost one of my cousins from the tsunami). We learned many things from that disaster. Cities and towns upgraded their infrastructures over the last ten years, and that probably saved lives.

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Headlines of the week

(Please contact dnumakura@dknresearch.com for further information and news.)

1. TDK (Major device manufacturer in Japan) 1/22

Has rolled out a new low cost small size carbon dioxide sensor “TCE-11101” made by MEMS technology. Package: 5x5x1mm, 28 pin LGA. Range: 400 ~ 50000 ppm.

2. TIT (Technical institute in Japan) 1/29

Has succeeded to develop electrode material based on $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ for lithium ion batteries. Its doubles the capacity of all solid state batteries.

3. Osaka University (Japan) 2/2

Has succeeded to develop new Seebeck effect material with the combination of germanium and silicon. The new material generate the voltage three times higher at room temperature.

4. TIT & Tokyo City University (Japan) 2/16

Have co-developed a new optical wireless power supply system using blue LED, valuable for smartphone and EV with 20.2% P/E conversion efficiency.

5.

6. Renesas Electronics (Major semiconductor manufacturer in Japan) 2/16

Has restarted the wafer shipment of manufacturing plants in Ibaraki and Yonezawa. The damages by the earthquake were minor.

7. TIT (Technical institute in Japan) 2/16

Has developed a new wireless system for THz band phased array telecommunication. It could be valuable for 5G smart phones.

8. Elephantech (Flex circuit manufacturer in Japan) 2/17

Will start the volume production of low cost flex circuits in Nagoya Plant using inkjet printing/electroless copper plating process.

9. Sony (Major electronics company in Japan) 2/18

Has developed a new distance measuring sensor of dToF (Time of Flight) for LiDAR (Light Detection and Ranging) of automobiles with SPDA (Single Photon Avalanche Diode). Resolution: 15cm at 300meters.

10. Renesas Electronics (Major semiconductor manufacturer in Japan) 2/19

Has rolled out series of RF devices for 5G micro-cell base stations. They are quad channel gain amp, low noise amp, RF switch and more.

11. Nikon (Major optical device manufacturer in Japan) 2/19

Has developed a new high speed CMOS image sensor with 17.84 million pixels. Pixel size:2.7 micron. Speed 1000 shots per second.

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