News Release

AICHI STEEL

September 4, 2017
Aichi Steel Corporation

Joint Development with Mizuno of an Internal Baseball Sensor Module Using the MI sensor

Aichi Steel Corporation (Headquarters: Tokai, Japan; CEO: Takahiro Fujioka) and general sporting goods manufacturer Mizuno Corporation (Headquarters: Osaka,Japan, President: Akito Mizuno; hereinafter: "Mizuno") have successfully developed a sensor module for the new product MAQ, a baseball rotation analysis system. There are plans to start supplying the module in line with the release for sale of Mizuno's product.

The MAQ (Figure 1) is a system that coordinates data acquired through a sensor module contained in a baseball with a specialized application so as to analyze the rotational frequency and speed etc. of the ball when thrown by a pitcher. It is anticipated that pitch type and pitch quality such as a "rising fastball" and a "sharp breaking ball" will be able to be scientifically analyzed based on the measured data.

The sensor module that was developed contains multiple sensors including the "MI sensor," a supersensitive nuclear magnetic impedance sensor developed by Aichi Steel Corporation, a micro-processor, memory, a radio transmission circuit, and a non-contact rechargeable battery in a 30 mm diameter resin case (Figure 2). The impact of catching a ball thrown through the air is detected and data captured in the memory is processed before being sent via Bluetooth to a nearby smartphone.

Despite strong anticipation for rotation detection function-equipped balls by the sporting industry, the lack of a small sensor with sufficient performance meant that no sensor-equipped balls that could detect rotation frequency of up to 50 rotations per second as are thrown by professional baseball pitchers had previously appeared on the market. The MI sensor properties of both high speed response and high sensitivity together with the advance of being ultra-small and having low power consumption were utilized to create a small sensor module that could be contained together with a battery inside a ball with a diameter of 30 mm, which would be equivalent to the cork used as the core in a baseball.

Aichi Steel Corporation, the material manufacturer of the Toyota Group, has a mission described as "A great society comes from great materials." Since the MI element was successfully developed and converted to mass production in 2002, we have been manufacturing the only Amorphous Wire material in the world by means of in-rotating liquid spinning as well as the MI sensor, a product to which this material has been applied. Although a cumulative total of over 140 million MI sensors have already been used as electronic compasses in smartphones, application development for an even wider range of industries including the application to a baseball described here is anticipated in the future. Going forward, Aichi Steel Corporation will position technology applying the MI sensor as MI sensor Technology and continue to proceed with strategic technological development of the MI sensor to contribute to creating an even greater society.

For detailed information on the MAQ, see the news release by Mizuno below.
http://corp.mizuno.com/jp/newsrelease/2017/20170904.aspx

Figure 1

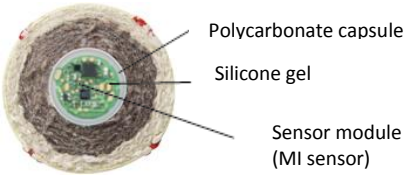

Figure 2

The information shown here was correct at the time of release. Please be aware that specifications and other information may change without notice.