SCREEN

News Letter

SCREEN Finetech Solutions Co., Ltd.

SCREEN Accelerates Business Expansion into Fuel Cell Market

Direct Coating Method Enables Delivery of Mass Production Systems to Key Customers

Kyoto, Japan - November 17, 2016 - SCREEN Finetech Solutions Co., Ltd. (SCREEN FT) has developed a coating and drying system capable of forming the electrode catalyst used for polymer electrolyte fuel cells (PEFC; below, fuel cells)[1] directly on the electrolyte membrane. The system provides essential support for companies transitioning to the mass production of fuel cells and has already been delivered to key SCREEN FT customers. SCREEN FT plans to use the orders received for the new system as a foothold to accelerate its expansion into the fuel cell field. The market continues to grow rapidly, driven by demand for fuel cells for cars and residential use (micro combined heat and power).

RT series
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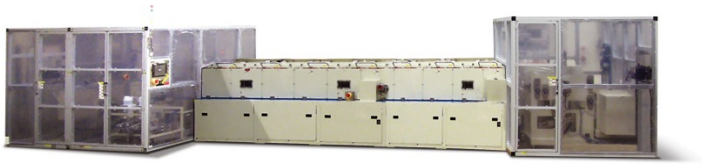

In recent years, increasing efforts have been made to resolve issues such as the stabilization of energy supply and prevention of global warming, as well as the strengthening of industrial competitiveness. This has included attempts to develop a “hydrogen economy”, in which hydrogen is used as an energy source for both consumer and commercial applications. Progress in this area has significantly raised expectations for fuel cells.

While the fuel cell market was already valued at 136.3 billion yen in fiscal 2014, it is predicted to grow to around 6.4923 trillion yen by 2030. Of special note are sales of fuel cell-powered cars, first released in 2014, and energy efficient residential fuel cells (micro combined heat and power). It is estimated that by 2030 cumulative global sales of fuel cell cars will have reached 800,000 vehicles, with 5.3 million residential fuel cells also installed. To ensure the continued penetration and expansion of fuel cell devices, it will be necessary to both shorten the time and reduce the costs involved in current manufacturing processes. These twin goals will require the creation of an array of new technologies.

Against this background, in 2013, SCREEN FT began to research technologies for the mass production of fuel cells, with assistance from the New Energy and Industrial Technology Development Organization (NEDO). In this project, SCREEN FT utilized the significant expertise in coating and drying technologies acquired during the creation of its coater/developer systems, which currently hold an approximately 80 percent share of the world market. The end result of this process was the successful development of technologies for the previously highly challenging application of the electrode catalyst directly on the electrolyte membrane. This important advance is now available to the market as part of SCREEN FT’s RT series of fuel cell productions systems.

The RT series utilizes a roll to roll format to enable continuous production of the catalyst coated membrane

(CCM)[2] used for fuel cells. This method dramatically improves productivity while at the same time reducing manufacturing costs. RT systems also incorporate an inspection unit that allows the checking of factors such as electrode dimensions, membrane thickness and potential defects, supporting the implementation of effective quality control.

SCREEN FT began shipping RT series models this fiscal year and the systems are already working to accelerate the mass production of fuel cells on the manufacturing lines of its core customers. The company plans to further improve the performance of the systems in an effort to make them the de facto standard for the fuel cell market. It will also continue to expand its business in this area, with a view to driving the growth of the overall fuel cell field and contributing to the realization of a sustainable hydrogen economy.

1. Fuel cell that utilizes a polymeric membrane with ionic conduction properties (ion exchange membrane) as an electrolyte.
2. Electrode membrane for fuel cells that is composed of a catalyst layer and electrolyte membrane.

Contact:

SCREEN Finetech Solutions Co., Ltd. fpdinfo@screen.co.jp