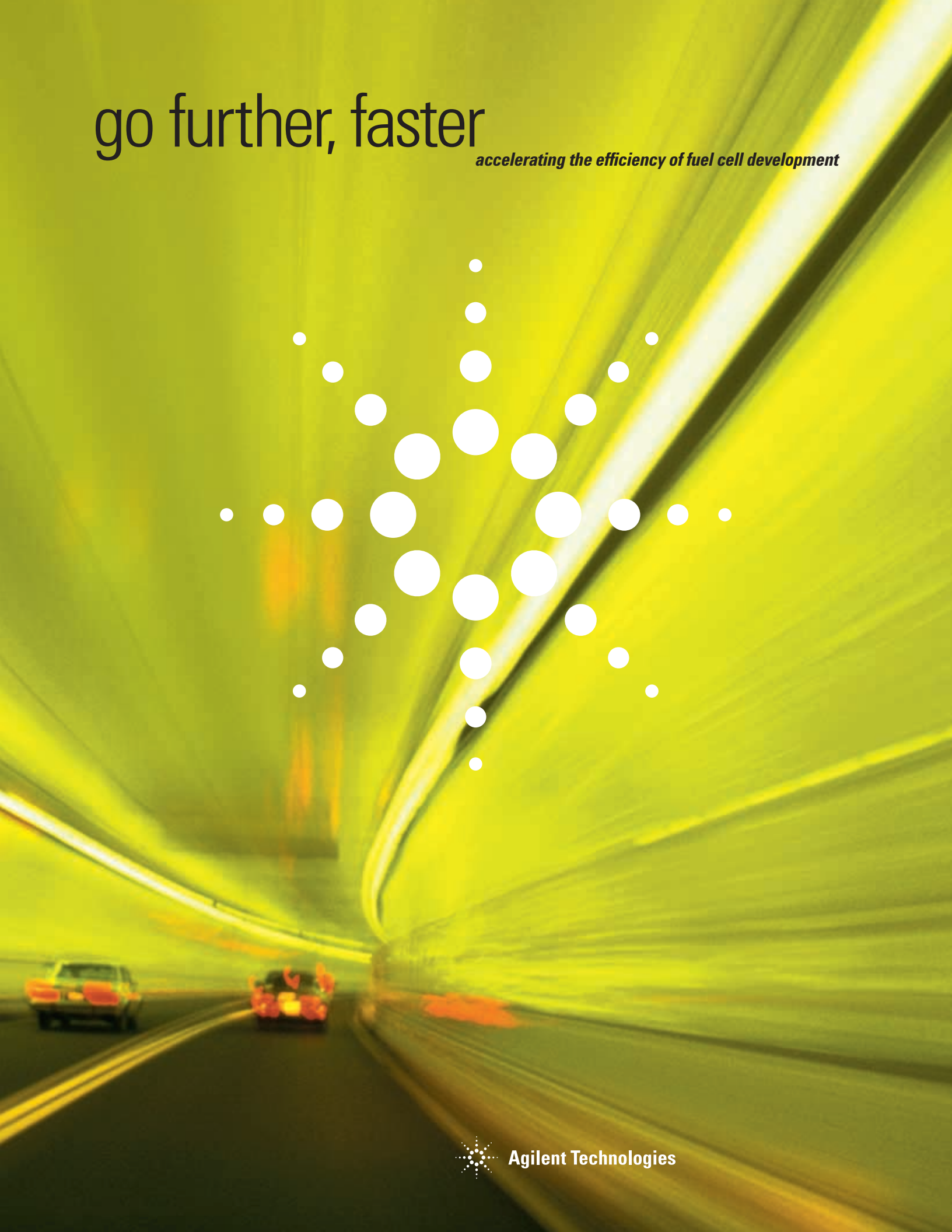
go further, faster

accelerating the efficiency of fuel cell development



Agilent Technologies

"In the race to get fuel cell technology to market, Agilent acts as a catalyst. Our expertise in chemical analysis will optimize your experiments, enabling you to quickly separate technologies that have promise from those that don't."

Mona Burke
Fuel Cells Markets Manager
Chemical Analysis Solutions

Agilent Technologies can put you on the fast track to commercialization.

Providing critical chemical information every step of the way.

Modeling

Reaction kinetics

Operating conditions optimization

Systems performance and verification

Materials and catalyst selection

Fuels characterization

Environmental testing and compliance

Fuel cell development has made rapid gains on many fronts, accelerated by cost-breaking technological advances. Within the next few years, fuel cells will deliver on the promise of providing a viable, environmentally superior source of energy. With active partnerships in this emerging industry, Agilent Technologies is able to provide significant competitive advantages for companies developing portable, transportation, and stationary fuel cells.

Chemical analysis: a crucial part of your fuel cell equation.

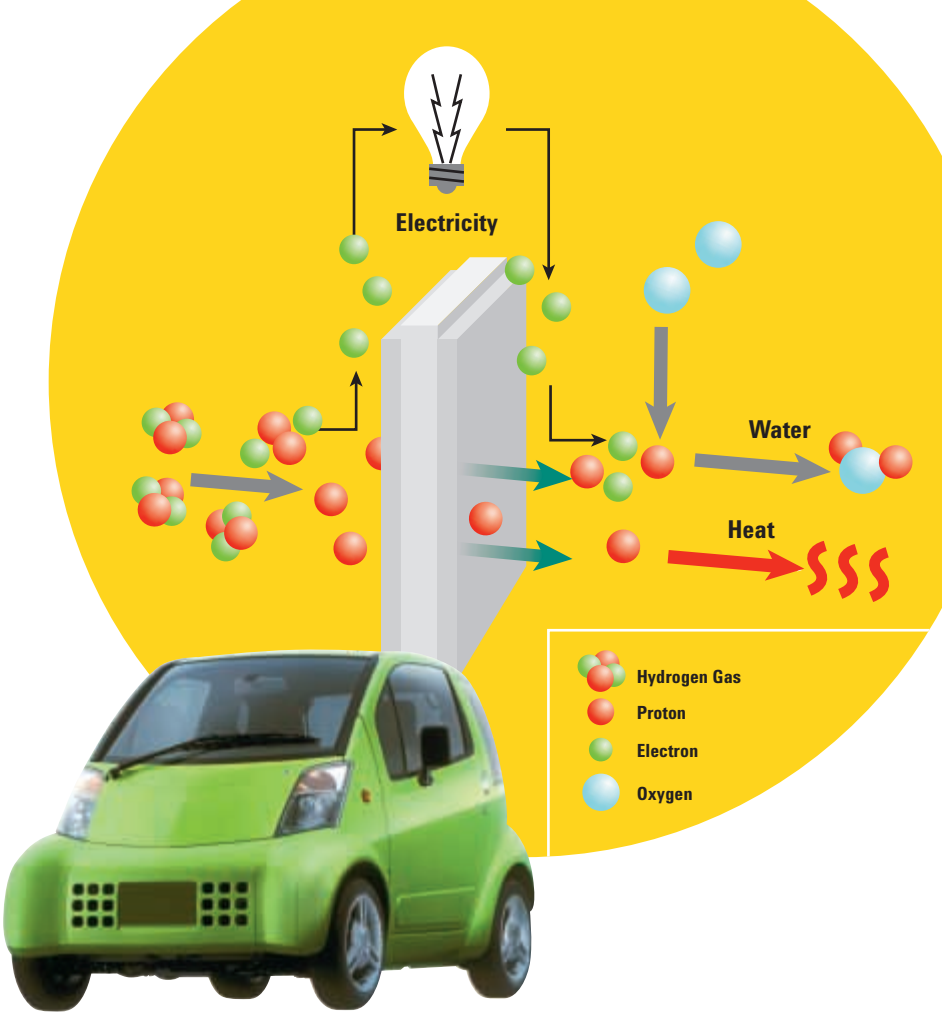
By examining the sample stream at key points in the process, chemical analysis can quickly determine how changes in components, reactants, or processes influence fuel cell operation and performance. How is the lifetime of the catalyst, for example, affected by various levels of sulfur compounds? Can a less costly substrate be used in a membrane electrode assembly without a performance loss? What is the conversion rate of the fuel? Can less catalyst be used? Chemical analysis allows you to focus on the critical variables and rapidly assess the many design options.

We can help fast-forward your entire development process.

The ability to integrate chemical measurement with other process variables is a potent combination that allows you to optimize the process from material selection to environmental compliance. Agilent's unparalleled technical expertise in method development and in adapting analytical instruments to specific applications minimizes guesswork and speeds implementation of your measurement system. We're committed to getting you on-line quickly with a system that produces efficient and reliable results. And you'll have a chemical analysis solution that's customized for your specific needs. When an Agilent system is implemented, it's a perfect fit.

One source for all your chemical analysis needs.

When you partner with Agilent, you'll benefit from our "start to finish" commitment to developing a total solution that ensures the success of your chemical measurement application. We begin with a customer dialogue that defines the issues and problems unique to your situation. Then we help you develop methods specifically designed for your fuel cell measurement needs. Physical installation of your system could include system assessment and any necessary staff training. Of course, service and consultative support from Agilent technical experts are available on a continuing basis. We'll help your development engineers maintain peak efficiency. And as your chemical analysis needs evolve or when you can benefit from new advances, we'll help keep you current.



Development of transportation applications — by far the largest market opportunity for fuel cells — is greatly enhanced by Agilent chemical analysis instrumentation and expertise.

Look to an experienced partner.

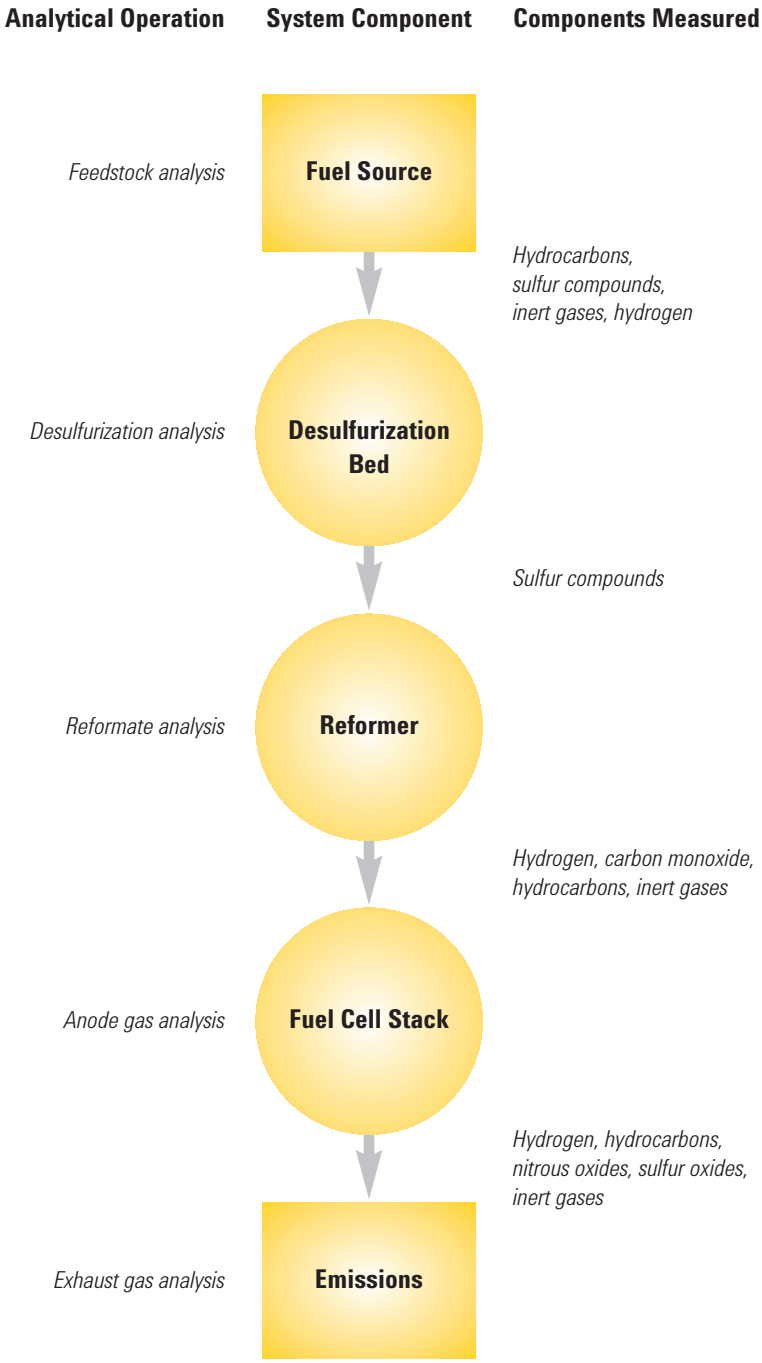
At Agilent, we're constantly looking for ways to advance your development efforts and move your business forward. It's a strategic approach that's enhanced by the knowledge gained from 35 years of chemical analysis experience, as well as our growing experience in the fuel cell industry. We're working with companies in such diverse areas of fuel cell development as sub-system fuels characterization, catalyst development, reformer design, sub-system manufacturing, and systems integration. We'll go further to help you minimize your time to commercialization and optimize the return on your investment.

Agilent supplies instrumentation to leading developers of stationary fuel cells and components.

About the size of a briefcase, the Agilent Micro GC is not only transportable, it's also fast enough to perform an analysis in less than 120 seconds. Fast enough to boost your productivity dramatically.

More efficiency from start to finish.

Agilent can help optimize your fuel cell experiments throughout the process.



Fuel cell performance and efficiency can be evaluated by chemical measurements at key points in the sample stream, from composition of the feedstock to the emissions. Measurement of the chemical composition of primary reactants to the fuel cell allows precise determination of stack efficiency. It can also help you optimize the design of sub-assemblies and verify the overall system design by providing you with information for accurate mass balances.

No time for downtime.

Agilent's technically superior platforms provide chemical analysis solutions to support and drive your fuel cell development efforts. Individually or in combination, our gas chromatography, mass spectrometry, and real-time gas analyzer instruments provide wide flexibility for handling virtually any chemical analysis task.

Micro GC — A high-speed, easy to use, gas chromatograph that can be easily moved to various laboratory stations. The Micro GC performs gas analysis at parts-per-million sensitivity in seconds rather than minutes or hours.

Real-Time Gas Analyzer — Provides real-time (2–5 seconds) measurements of multiple compounds; especially useful for transient analysis.

GC/MS — A gas chromatograph-mass selective detector is suitable for chemical speciation and identification of unknowns; applicable for low-level sulfur detection.

GC — A gas chromatograph designed for flexibility that can be easily configured to meet the changing analytical needs of research and development.

www.agilent.com/chem/fuelcells
800-227-9770

For more information

To learn more about all Agilent can do to help accelerate your fuel cell development, call us at 800-227-9770 or visit our web site at www.agilent.com/chem/fuelcells. On the fuel cell page of our web site, you'll find extensive Internet resources such as application notes and product information.

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