Improved Fuel Cell Function

BACKGROUND
Because of rising gas prices and the pressure to limit vehicular emissions, many would like to see the widespread use of cars powered by hydrogen fuel cells. Although manufacturers have made functioning hydrogen fuel cells, one common problem is that the fuel cells can become blocked by water and “flood.” To remedy this problem, the cells are designed so water drops are moved through the channels to the exit via the gas flow. However, the water is still inhibited by pinning within the contact line region, and this disruption has been a barrier to increased commercial use of fuel cells.

INVENTION
The solution is to use the inertia of the liquid drop to dislodge the pinned contact line by forced oscillations of the drop at or near the natural frequency of the liquid surface. This will allow steady motion of the liquid within the fuel cell, leading to improved fuel cell function and the ability to use fuel cells on a grand scale.

ADVANTAGES
- More efficient removal of fuel cell water
- Moisture removed during idling
- Inherently simple solution

APPLICATIONS
- Personal vehicles
- Commercial vehicles
- Stationary power units

TECHNOLOGY STATUS
Prototype currently under development
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