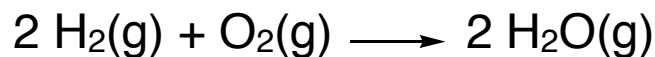
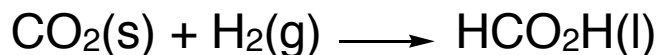


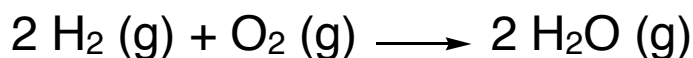
Fuel Cells: Where are those electrons going?

Model 1: adding and removing hydrogen atoms



atoms are reduced by adding hydrogen atoms

Critical Thinking Questions



1. Pretend for a moment that H_2O is an ionic compound...
 - a. If H_2O were an ionic compound, what would the charge on the O atom of H_2O be?
 - b. To neutralize the charge of the O atom, the total charge of the H atoms would have to be what?
 - c. Based on your response in part b. each H atom would have to have what charge?
 - d. Based on your responses in parts a-c. complete the following table.

charge on H		charge on O	
as reactant	as product	as reactant	as product

- e. Describe in your own words what is happening with the electrons. In other words, how many electrons are moved, and where were they at the beginning of the reaction, and where are they at the end?

2. Add a wire, some gas permeable membranes, and a little engineering and what you have described in 9.e. is a hydrogen powered fuel cell. Based on the following reaction, do you think that it is theoretically possible to use carbon as a fuel for a fuel cell (repeat steps a-e).

