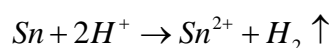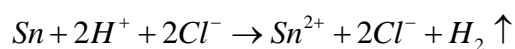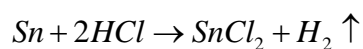**Answer on Question #71060, Chemistry / General Chemistry:**

A piece of solid Sn metal is put into an aqueous solution of HCl. Write the net ionic equation for any single-replacement redox reaction that may be predicted by the table on the information page.

Solution.

The proximity of the normal potential of Sn and hydrogen, as well as the high overvoltage of hydrogen on the Sn, explain the low rate of interaction of this metal with dilute acids (especially in the absence of oxygen).

Concentrated hydrochloric acid readily (especially on heating) dissolves Sn to form $SnCl_2$ and hydrogen.

$$Sn + 2HCl \rightarrow SnCl_2 + H_2 \uparrow$$
$$Sn + 2H^+ + 2Cl^- \rightarrow Sn^{2+} + 2Cl^- + H_2 \uparrow$$
$$Sn + 2H^+ \rightarrow Sn^{2+} + H_2 \uparrow$$

And:

$$Sn + 2HCl \rightarrow SnCl_2 + H_2 \uparrow$$
$$Sn - 2e^- \rightarrow Sn^{2+}$$
$$2H^+ + 2e^- \rightarrow H_2 \uparrow$$