MISSION: To advance the fundamental understanding and discovery of multihued hydrogen transport in inorganic solids of earth-abundant elements, and of its transfer along and across interfaces within such materials, where ‘hydrogen’ includes all charge states of the element: $H^+$ (proton), $H^0$ (atom), and $H^-$ (hydride ion).

RESEARCH PLAN
Leveraging the interdisciplinary expertise of the team, which spans from chemistry to materials science, and applied physics to nuclear engineering, HEISs undertakes comprehensive studies to assess hydrogen ($H^+$, $H^0$, and $H^-$) transport through bulk materials, across and along solid-solid interfaces, and incorporation at gas-solid surfaces. HEISs exploits novel stimuli - light, stress, and extreme electric field - and engineered defects – in many cases resulting from these stimuli – as routes to manipulate and enhance hydrogen dynamics.

https://heiss.northwestern.edu/