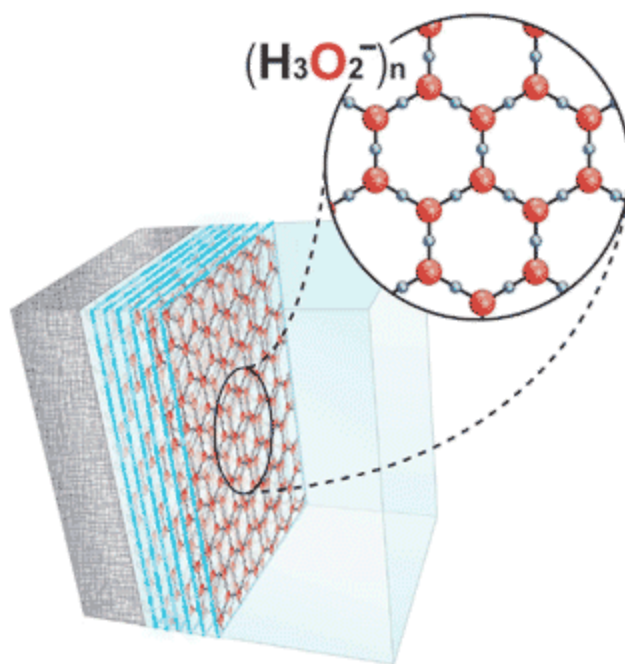


Cell depolarization splits water to release electrons

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Gels selectively exclude hydrogen ions relative to hydroxide ions, and do so because filaments act as a scaffold around which water can organize into a "gel-phase", chemically H_3O_2^- , $\text{OH}^- + \text{H}_2\text{O}$. Gels "tear apart" water. The reason a gel forms is because a filament matrix, architecturally, pulls water apart. Gels are a result of an inherent water-splitting ability in the physical architecture of the filament scaffold it organizes around. *The act of the gel forming to begin with, is the first half of water catalysis.* If the gel collapses, because of an architectural change in the scaffold, the second half of the reaction can take place. The hydroxide ions, that have been physically isolated from their hydrogen ion counterparts, will react with one another, forming $\text{H}_2\text{O}_2 + 2 \text{ electrons}$. Electricity. The H_2O_2 then decays into H_2O and O_2 , the full chemical reaction, $4 \text{ OH}^- \rightarrow 2 \text{ H}_2\text{O} + \text{O}_2 + 4 \text{ e}^-$.



References

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