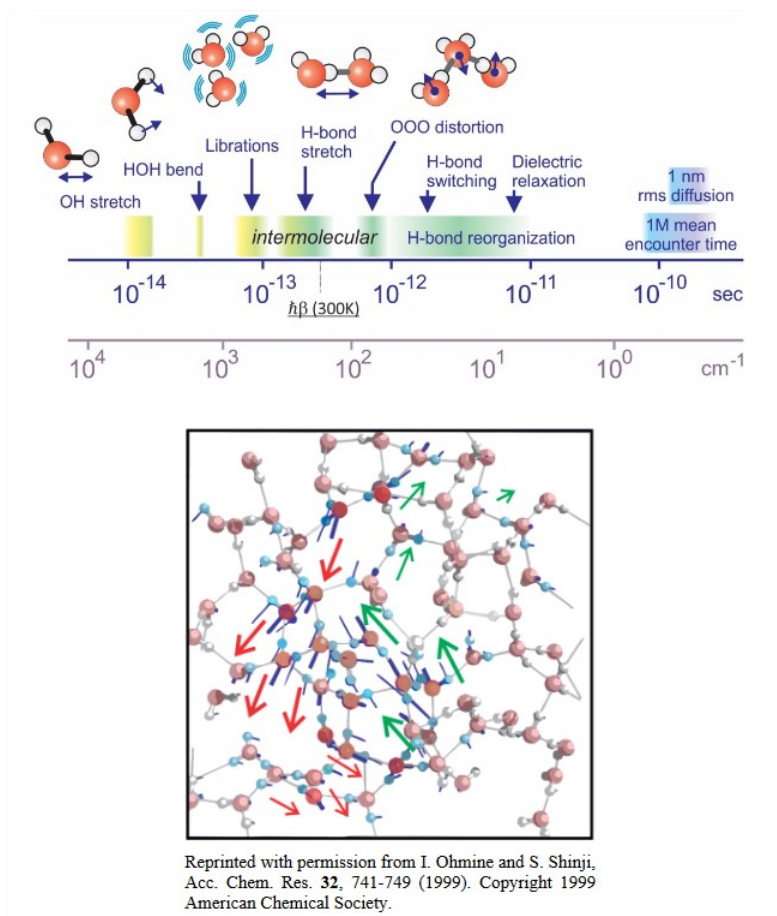


## 3.2: Water Dynamics

### Water Dynamics

- Hydrogen bond distances and angles fluctuate with 200 and 60 femtosecond time scales, respectively.
- Hydrogen bonded structures reorganize in a collective manner on picosecond time scales (1–8 ps).



The water HB energy is tough to measure:

- 2-6 kcal mol<sup>-1</sup> depending on the method used.
- These are  $\Delta H$  for reorganization, but we do not know how many HB broken or formed in the process.

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