Hydrogen-bonding aggregation of acrylamide: theory and experiment

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Hydrogen bonding is common in nature

Hydrogen-bonding = reversible chemical reaction
What are the rules of association?

- How many bonds can O form?
- How many bonds can NH$_2$ form?
- What is the minimal number of association constants and what are their values?

Why it is important?

- High-$\chi$ copolymers, small period of microstructure
- Better understanding of properties of polyacrylamide
- Proposed model might be useful for studies of dynamic properties of hydrogen-bonding polymers.
- Applications: microelectronics, drug-delivery, self-healing plastics, tough recyclable elastomers.