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Abstract for an Invited Paper  
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### **Are There Two Forms of Liquid Water?**

H. E. STANLEY, Departments of Physics, Chemistry, Physiology, Biomedical Engineering: Boston University

We will introduce some of the 73 documented anomalies of the most complex of liquids, waterfocusing on recent progress in understanding these anomalies by combining information provided by recent experiments and simulations on water in bulk, nanoconfined and biological environments designed to test the hypothesis that liquid water has behavior consistent with the novel phenomenon of liquid polymorphism in that water can exist in two distinct phases [1]. We will also discuss very recent work on nanoconfined water anomalies as well as the apparently related, and highly unusual, behavior of water in biological environments. Finally, we will discuss how the general concept of liquid polymorphism is proving useful in understanding anomalies in other liquids, such as silicon, silica, and carbon, as well as metallic glasses, which have in common that they are characterized by two characteristic length scales in their interactions.

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[1] H. E. Stanley, Editor, Liquid Polymorphism, Vol. 152 in Advances in Chemical Physics, S. A. Rice, Series Editor (Wiley, New York, 2013).