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DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY**

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**Molecular Perspectives of Water
Through Nanomatrix Spectroscopy**

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The conduction of elementary charges (e.g., protons and electrons) through water is one of the long standing mysteries in aqueous chemistry. We bring the molecular level aspects of this problem to light using argon nanomatrix spectroscopy, which enables us to watch how ice crystals grow, starting from a single molecular seed. We find that the network morphologies are strongly dependent on the charge state, and we will discuss the role of clathrate or cage-like structures in the primary steps of hydration.

Professor Mark Johnson received his B.S. degree from University of California, Berkeley in 1977 and his Ph.D. from Stanford University in 1983. He was then a Post-Doctoral Fellow at University of Colorado and JILA before joining the faculty at Yale University, where he is now a Arthur T. Kemp Professor of Chemistry. He was also a Professeur Invité at Université de Paris-Nord in 1999 and Université de Paris-Sud (Orsay) in 1994. Professor Johnson has collected a number of honors and awards such as the NSF Presidential Young Investigator award, the Camille and Henry Dreyfus Teacher-Scholar Award, and the Earle K. Plyler Prize in Molecular Spectroscopy of the American Physical Society. He has served on Executive and Divisional committees of the American Chemical Society and the American Physical Society. He has organized and chaired many symposia and was Chair of the 2001 Gordon Research Conference on Photoions and co-Chair of the 1996 Gordon Research Conference on Molecular and Ionic Clusters.

He is currently a Fellow of the American Physical Society and the American Association for the Advancement of Science, and an Advisory Editor of Chemical Physics Letters. Professor Johnson's research interests are in chemical physics and physical chemistry and he has published over 130 articles in the field.

