

help us understand the unusual properties of these mysterious forms of matter. We witness an ancient Egyptian scribe dissolving a pinch of Arabic gum to stabilize the black ink. We observe the ancient world of Amazon Indians, who made rubber boots 25 centuries ago. The author describes a runaway boat speeding by at a velocity 40% higher than it was designed for and explains the process of drag reduction by polymers.

There are children around a pond laughing and making soap bubbles. The gentle summer breeze lifts the bubbles up. The bubbles look alive, gleaming and glittering with every color of the rainbow. They softly float over our heads and then suddenly burst and disappear. We watch a family of ducks getting out of the water and drying their feathers. De Gennes points to the ducks and describes the problem of wetting and dewetting. As we walk past a highrise building, he recalls how adding polymer to water helped rescue a young lady from the 11th floor when the building was on fire.

In addition to offering us many unforgettable examples of fragile objects, de Gennes tells us about the scientists who have studied them. He describes the difficulties they faced uncovering these mysteries of nature and the thrill and excitement they felt discovering the answers through cleverly designed experiments. The author tells us about the difficult choices scientists face, such as the decision Richard Kuhn made in the 1930s to switch from quantum mechanics and atomic physics to the "bizarre" and "unclean" field of macromolecules, subsequently bringing extraordinary contributions to it. Half a century later, de Gennes himself faced similar decisions, switching fields several times during his brilliant career, moving from superconductors to liquid crystals to polymers to wetting and, most recently, to adhesion. De Gennes explains how he decided when to switch and what field to switch to and deals with the difficulties and new opportunities related to changing areas.

Another difficult choice modern scientists often face is the balance between fundamental and applied research, which the author compares to a high-wire dance. He describes several possible solutions, such as mixed basic-applied laboratories and exchanges between industry and universities. A special place in the book is devoted to problems of education (mainly in France but also in the US), along with several other social problems related to science.

I immensely enjoyed reading *Fragile Objects* and intend to use many of

its examples in my lectures. I highly recommend it to any reader who is interested in condensed matter physics and science at large.

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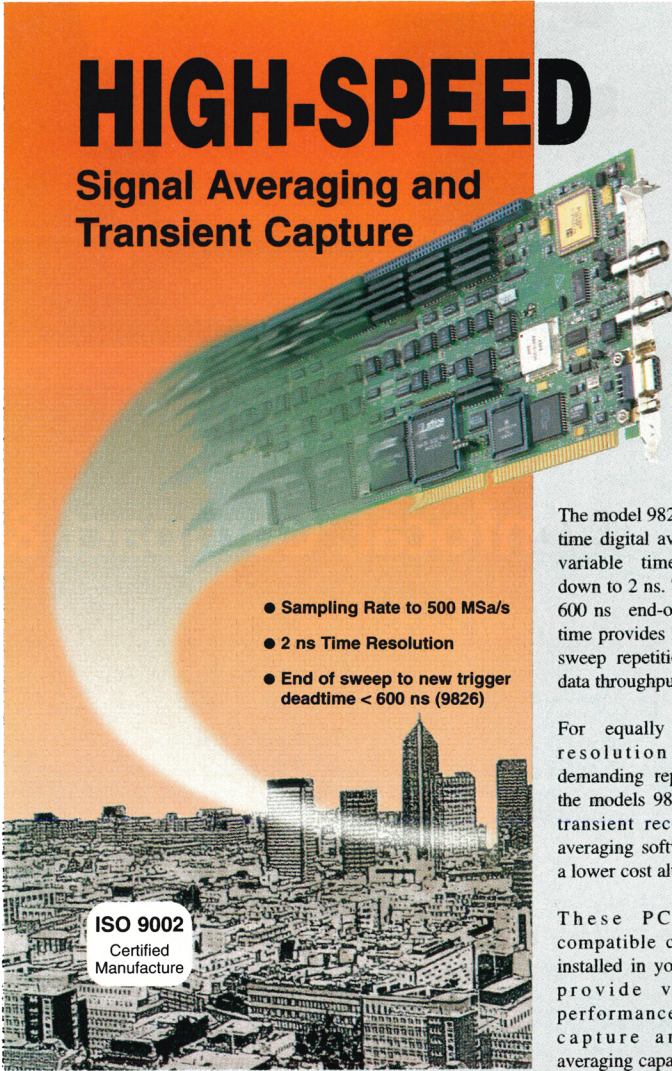
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