

DEDICATION

Robert Silbey 1940-2011



The Royal Society Theo Murphy International Scientific Meeting in Quantum-Coherent Energy Transfer: Implications for Biology and New Energy Technologies was one of the last scientific meetings attended by Bob Silbey, who died on October 27, 2011. As always, he brought his combination of erudition, clear thinking, wit, and general good humour to the Chicheley Hall. Here a mixed groups of experimentalists and theoreticians had come together to talk about how quantum effects may underlie natural photosynthetic light harvesting and the implications of the ubiquity of such effects in natural systems for non-biological solar energy to fuel conversion. Bob's special skill of moving easily between the two worlds of theory and experiment was a key ingredient in the success of the meeting. Indeed, conferences were always livelier and more enjoyable when Silbey was present. The deep resonant voice commanded the room, steered the discussion and produced many of the most memorable moments and comments.

Bob had an extraordinary range as a theorist who was particularly adept at describing complex phenomena. He was a wizard of the many uses of unitary transformations which reduced a complex problem to one of simplicity and transparency. He moved with ease from excitons to conducting polymers to tunnelling in condensed media, where he showed that renormalised tunnelling could slow down enormously the irreversible tunnelling from one well to another.

He made significant contributions to single molecule spectroscopy and to ultrafast spectroscopy. He contributed enormously to the theories of spectroscopy, energy transfer and nonlinear optical properties of glasses, solids and polymers. In the last few years, Silbey devoted significant effort to developing methods for calculating, and exploring the functions created by, quantum electronic coherence in photosynthetic energy transfer. He explored the role of environmental fluctuations in setting an optimal rate of energy flow, and how interference between multiple energy transfer pathways may have functional significance. The combination of sophisticated experiments, with both conceptual and technical difficulties in the theory, was a perfect stage for Bob Silbey's talents. When new technical or conceptual difficulties arose in this rapidly developing field, it was astonishing to realise how frequently Bob had anticipated them many years earlier. We all will greatly miss his wisdom and insight as the field develops from the base that Bob did so much to create.

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