



Graham R. Fleming

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Personal History

Ph.D. Physical Chemistry, University of London, U.K. 1974. B.Sc., Honors, Physical Chemistry, University of Bristol, U.K. 1971.

2005-2007: Deputy Director, Lawrence Berkeley National Laboratory. 2002-05: Associate Laboratory Director for Physical Sciences, LBNL. 2000-Present: Berkeley Director, QB3. 2002-Present: Melvin Calvin Distinguished Professor of Chemistry, UC Berkeley. 1997-2002: Professor, Chemistry, UC Berkeley Director. 1997-2005: Physical Biosciences Division, LBNL. 1987-97: A. H. Compton Distinguished Services Professor, Univ of Chicago. 1985-87: Professor, Chemistry, Univ of Chicago. 1983-85: Associate Professor, Univ of Chicago, 1979-83: Assistant Professor, Univ of Chicago. 1977-79: Leverhulme Fellow, Royal Institution.

Research Interests

Condensed phase chemical and biological dynamics. The primary steps in photosynthesis and its regulation. Quantum dynamics and quantum information in condensed phases. Photochemical reaction mechanisms and liquid dynamics. Electronic processes in low-dimensional and nanoscale objects. Development of nonlinear optical spectroscopies to probe complex systems.

Five Most Significant Publications

1. "Carotenoid Cation Formation and the Regulation of Photosynthetic Light Harvesting, N.E. Holt, D. Zigmantas, L. Valkunas, X-P. Li, K. K. Niyogi and G.R. Fleming. *Science*, **307**, 433-436 (2005).
2. "Two-Dimensional Spectroscopy of Electronic Couplings in Photosynthesis", T. Brixner, J. Stenger, H. Vaswani, M.Cho, R.E. Blankenship and Graham R. Fleming. *Nature*, **434**, 625-628 (2005).
3. "Evidence for wavelike energy transfer: Quantum coherence in photosynthetic systems" G.S. Engel, T. Calhoun, E. L. Read, T. K. Ahn, T. Mancal, R. E. Blankenship and G. R. Fleming. *Nature*, **446**, 782 (2007).
4. "Coherence dynamics in photosynthesis: Protein protection of excitonic coherence", H. Lee, Y.-C. Cheng and G. R. Fleming, *Science* **316**, 1462 (2007).
5. "Architecture of a Charge-Transfer State Regulating Light Harvesting in a Plant Antenna Protein", T. K. Ahn, T. J. Avenson, M. Ballottari, Y-C Cheng, K. K. Niyogi, R. Bassi and G. R. Fleming, *Science*, **320**, 794-796 (2008).