Biographical Sketch - Michael M. J. Treacy

Physics Department
Bateman Physical Sciences PSB 147
Arizona State University
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(i) Professional Preparation

University of Cambridge, Natural Sciences, B.A. 1976
University of Cambridge, Research in Electron Diffraction Physics, PhD. 1980
IBM Thomas J. Watson Laboratories, World Trade Postdoctoral position, 1980

(ii) Appointments

Professor, Dept. of Physics *Arizona State University*, 2006–present
Professor, Dept. of Physics & Astronomy *Arizona State University*, 2003–2006
Senior Research Scientist, Physical Sciences, *NEC Research Institute*, Princeton, NJ 1990–2002
Senior Physicist, *Exxon Research & Engineering Company*, Annandale NJ, 1984–1990
Physicist, *Exxon Chemical Company*, Linden & Annandale NJ, 1982–1984
Engineer Gr. 2, *Centre National D'Etudes des Télécommunications* Bagneux France 1981–1982

(iii) Publications

(i) Publications related to the project:

M. M. J. Treacy, M. D. Foster and I. Rivin, Towards a catalog of designer zeolites, in *Turning Points in Solid State, Materials and Surface Science*, ed. By K.D.M. Harris and P.P. Edwards, RSC Publishing, Cambridge, U.K. Ch. 12, pp. 208–220, (2008).

A. Sartbaeva, S. A. Wells, M. M. J. Treacy and M. F. Thorpe, The flexibility window in zeolites, *Nature Materials* **5** 962–965 (2006).

S. A. Wells, M. D. Foster and M. M. J. Treacy, A Simple Geometric Structure Optimizer for Accelerated Detection of Infeasible Zeolite Graphs, *Microporous and Mesoporous Materials* **93** 151–157 (2006).

M. D. Foster, I. Rivin, M. M. J. Treacy and O. Delgado Friedrichs, A geometric solution to the Largest-Free-Sphere problem in zeolite frameworks, *Microporous and Mesoporous Materials*, in press (2005).

M. M. J. Treacy, I. Rivin, E. Balkovsky, K. H. Randall and M. D. Foster, Enumeration of Periodic Tetrahedral Frameworks. II. Polynodal Graphs, *Microporous and Mesoporous Materials* **74** 121–132. (2004).

(ii) Significant Publications:

M. M. J. Treacy, A. Howie and C. J. Wilson, Z Contrast of Platinum and Palladium Catalysts, *Philos. Mag.,* **A38** 569–585 (1978).

M. M. J. Treacy, J. M. Gibson and A. Howie, On Elastic Relaxation and Long Wavelength Microstructures in Spinodally-decomposed InGaAsP Epitaxial Layers, *Philos. Mag.*, **A51** 389–417 (1985).

J. M. Newsam, M. M. J. Treacy, W. Koetsier and C. B. deGruyter, Structural Characterization of Zeolite Beta, *Proc. R. Soc. Lond.*, **A420** 374–405 (1988).

M. M. J. Treacy, J. M. Newsam and M. W. Deem, A General Recursion Method for Calculating Diffracted Intensities from Crystals Containing Planar Faults, *Proc. R. Soc Lond.* **A433** 499–520 (1991).

M. M. J. Treacy, T. W. Ebbesen and J. M. Gibson, Exceptionally high Young's modulus observed for individual carbon nanotubes, *Nature*, **381** 678–680 (1996).

(iv) Synergistic Activities

Fellow of the American Physical Society.
Chair of the Structure Commission of the International Zeolite Association
Co–organizer and organizer of five workshops/conferences, three with associated publications.
Recipient of the triennial **Barrer Award** from the Royal Society for Chemistry (1990)
Recipient of the triennial **Breck Award** from the International Zeolite Association (1996)

(v) Collaborators & Other Affiliations

(a) Other affiliations: Special Term Appointment to the Advanced Photon Source, Argonne National Labs.

(b) Collaborators and Co-Editors: J. M. Gibson, director of the Advanced Photon Source at Argonne, Developing Fluctuation x-ray microscopy method for studying disordered nanoscale self assembled systems.

J. B. Higgins, co-author of *Collection of simulated powder x-ray diffraction patterns for zeolites*, Elsevier (2007).

(c) Graduate and Postdoctoral Advisors: Professor Archie Howie, Emeritus director of the Cavendish laboratory, University of Cambridge and Dr. King Ning Tu, IBM Yorktown Heights.

(d) Thesis Advisor and Postgraduate-Scholar Sponsor: Paul Voyles (PhD 2000), Ajit Krishnan, Ki-Tae Park and Juyin Cheng. Current PhD students are Dushyant Kumar and Annick Rougee.