

**Vita for Principal Investigator: Charles Austen Angell**  
**Regents' Professor of Chemistry and Biochemistry**  
**Dept. of Chemistry and Biochemistry**

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**(a) Professional Preparation**

B. Sc: Chemical Metallurgy, Melbourne University, Australia	1954
M. Sc: Chemical Metallurgy, Melbourne University, Australia	1956
Research Fellow: Chemistry Department, University of Pennsylvania	1956-58
Stanley Elmore Fellow: Imperial College of Science, University of London	1958-60
Ph. D.: Chemistry, Imperial College of Science, University of London	1961
Research Associate: Argonne National Laboratory (with D. M. Gruen)	1964-66

**(b) Appointments**

	<b>Place</b>	<b>Date</b>
Visiting Professor	Dept. Theor. Phys., Univ. Rome (May-June)	1997
Professor of Chemistry	Arizona State University	1989
Professor of Chemistry	Purdue University	1971
Assoc. Prof. of Chemistry	Purdue University	1968
Asst. Prof. of Chemistry	Purdue University	1966
Lecturer	Melbourne University, Australia	1962-64

**(c) Impact of research, awards etc, see (i) other**

**(d) Publications:** (460) 20yrAv. cites/paper: **56**. Five most cited: 1538, 911, 896, 859, 565

**1. Five most Relevant Publications:**

- (i) "Formation of Glasses from liquids and biopolymers" C. A. Angell, *Science*, 267, 1924 (1995) **(1538 cites)**
- (ii) "Relaxation in Liquids, Polymers and Plastic Crystals - Strong/Fragile Patterns and Problems", *J. Non-Cryst Sol.* 131-133, 13, (1991) **(911 cites)**
- (iii) Glass formation and glass transition in supercooled liquids, with insights from study of related phenomena in crystals". (based on opening talk ICNAS, Brazil 2007) C.A. Angell, *J. Non-Cryst. Solids*, 354 (2008) 4703-4712
- (iv) Gaussian excitations model for glass-former dynamics and thermodynamics", Dmitry V. Matyushov and C. Austen Angell, *J. Chem. Phys.*, 126, AN 094501 (2007)
- (v) "Insights into Phases of Liquid Water from Study of Its Unusual Glass-Forming Properties," C.A. Angell, *Science* 319, 582, (2008)

**(2) Five other relevant publications**

- (i) "Water and its anomalies in perspective: tetrahedral liquids with and without liquid-liquid phase transitions," C. A. Angell, R. D. Bressel, M. Hemmatti, E. J. Sare and J. C. Tucker, *Phys. Chem. Chem. Phys.* 2, 1599-1566 (2000). **(83 cites)**
- (ii) "Thermodynamic determination of fragility in liquids and a fragile-to-strong liquid transition in water," K. Ito, C. T. Moynihan and C. A. Angell, *Nature* 398, 492-495 (1999). **(256 cites)**
- (iii) "Parallel developments in inorganic, aprotic, and protic ionic liquids: physical chemistry and applications" C. Austen Angell, Nolene Byrne" and Jean-Philippe Belieres, *Accounts of Chemical Research* (special issue), 40, 1228-1236, (2007)
- (iv) Vitrification of a monatomic metallic liquid". H Bhat, V. Molinero, V. Solomon, E. Soignard, S. Sastry, J. L. Yarger, and C. A. Angell. (*Nature*, 448, 787-790, (2007)
- (v) "Vibrational dynamics and thermodynamics, ideal glass transitions and folding transitions, in liquids and biomolecules", C. Austen Angell, Li-min Wang, Stefano Mossa, and John R.D. Copley, A. I. P. Conference Proceedings ("Slow Dynamics" 2003), 708, 473 (2004).

**(e) Synergistic activities. (integration and transfer of knowledge)**

- (1) **Gordon Conference Chairmanships:** (1) 1977 - Molten Salts and Metals  
(2) 1980 Water and Aqueous Solutions (3) 1997 - Chemistry and Physics of Liquids
- (2) **Invited Gordon Research Conference Contributions** (as speaker or discussion leader) between 1965 and 2003: **53 (44 as speaker, 9 as Discussion Leader)**

- (3) **Reviews of fields of knowledge:** invited by *Annual Reviews of Physical Chemistry*  
 (i) (Fused Salts (1971) (ii) Supercooled Water (1983) **312 cites** (iii) Mobile Ions in Amorphous Materials (1992) **214 cites** (1992) (iv) Amorphous Water (2003) **67 cites**.  
 invited by *Chemical Reviews* (i) Ion Dynamics in glass (1991) **317 cites** (ii) Aqueous Fragility and Glass transition (2004) **100 cites** (iii) Amorphous Water (iv) Polyamorphism (iv) Negative pressure liquids (open invite)  
 invited by *J. Appl. Phys.* (i) Relaxation in Glassforming liquids and amorphous solids (**565 cites**)  
 invited by *J. Phys.Chem. Solids* (i) Perspective on the glass transition (**538 cites**)

(4) **Recent Opening Chapters of Books:** (1). *Water Science for Food, Health, Agriculture and Environment* (eds. Birk et al., 2000), (2) *Insulating and semi-conducting glasses* (Boolchand, 1999), (3) *Physics and Applications of Disordered Materials*. (M. Popescu. 2003),

**(f) Collaborators and Other Affiliations**

- (a) **Collaborators and Co-editors (never were students or Post-Docs)**  
 (US) C. T. Moynihan, Materials, Rennselaer Poly, H. E. Stanley, Physics, Boston Univ., F. W. Starr, NIST, J. R. D. Copley, NIST, J. L. Yarger. Chem. Wyoming  
 (foreign) W. Kob, Univ. Montpellier, France, H. Schober, Inst. Laue Langevin, France, Christiane Alba-Simeonesco, Saclay, Yuanzheng Yue, Engineering, Univ. Aalborg, Denmark,  
 (b) **Past Graduate Students: (last five years)**  
 Jean-Philippe Belieres, Telpriore Tucker (present) Allan Friesen (present)  
 (c) **post-docs last five years:** Limin Wang, Aki Hayashi, Masaharu Yoshizawa. Ayumi Minoguchi, Harish Bhat, Xiaoguang Sun, Fuminori Mizuno, Valeria Molinero, Vitaly Kapko, Jean-Philippe Belieres, Nolene Byrne,  
 (d) **Names of Graduate and Post-Doc. Advisors**  
**Graduate:** Prof. J. W Tomlinson (Imperial College of Science (London) (deceased)  
**Post-Doc:** Dr. D. M. Gruen (Argonne National Laboratory)

**(g) Number of Ph.D.s graduated (1966 (Asst. Prof., Purdue Univ.) till present: 41**

**(h) Number of post-doctoral fellows (1966-present): 48**

**(i) Other (impact of research.)**

- (i) H index 74 (Thompson) 75 actual (includes “Strong and fragile liquids” (conf. proc.))  
 (ii) Reports, or invited commentaries in **Nature or Science** *total*; 24. *Since 1998*; 10  
 (iii) Papers cited over 100 times: *total*; 54. *Since 1998*; 7 (and one review)  
 (iv) International Conference invited talks: since 1998; about 40  
 (v) **Awards** \* 2006: Turnbull Lecture of the Materials Research Society (for glass studies)  
 • 2004 Humboldt Senior Research Fellowship, Germany.  
 • 2004: Hildebrand award of the Amer. Chem. Soc. (for liquids studies)  
 • 1992: Neville Mott Award of the Journal of Non-Cryst. Solids.  
 • **NSF Special Creativity Awards** (DMR, Solid State Chemistry) 1985 & 1994  
 (vi) **Other recognitions:** Special issue of *J. Phys. Chem.* (May, 1999)