PUBLICATIONS LIST FOR DR ANITA MEHTA

1 BOOKS WRITTEN

1. *Granular physics*, by Anita Mehta, (Cambridge University Press, Cambridge, 2007)

2 BOOKS EDITED

1. *Granular Matter: An Interdisciplinary Approach* , edited by Anita Mehta, (Springer-Verlag, New York, 1994)

2. *Frontiers in Granular Materials*, Proceedings of International Conference on **Challenges in Granular Physics**, guest editors Anita Mehta, Thomas C. Halsey (*Advances in Complex Systems*, special issue, 2002).

3. *Challenges in Granular Physics*, editors Thomas C. Halsey and Anita Mehta (World Scientific, 2002).

3 PUBLICATIONS IN SCIENTIFIC JOURNALS

1. "Renormalisation group approaches to interacting walk models", Anita Mehta and R B Stinchcombe, *J. Phys.* **A 19**, 2155 (1986)

2. "Statistical mechanics of powder mixtures", Anita Mehta and S F Edwards, *Physica* **A 157**, 1091 (1989)

3. " Dislocations in amorphous materials ", S F Edwards and Anita Mehta, *Journal de Physique* **50**, 2489 (1989)

4. "Novel temporal behaviour of a nonlinear dynamical system - the completely inelastic bouncing ball", Anita Mehta and J M Luck, *Physical Review Letters* **65**, 393 (1990)

5. "A phenomenological approach to relaxation in powders", Anita Mehta and S F Edwards, *Physica* **A 168**, 714 (1990)

6. "A Monte Carlo study of granular relaxation", T A J Duke, G C Barker and Anita Mehta, *Europhysics Letters* **13**, 19 (1990)

7. "The bouncing ball revisited", Anita Mehta and J M Luck, *Modern Physics Letters* **B4**, 1245 (1990)

8. "A statistical theory of entangled lattice polymers", Anita Mehta, R J Needs and D J Thouless, *Europhysics Letters* **15**, 113 (1991)

9. "Vibrated powders - a microscopic approach", Anita Mehta and G C Barker, *Physical Review Letters* **67**, 394 (1991)

10. "The self-organising sandpile", Anita Mehta and G C Barker, in *New Scientist* , 40 **15 June**, (1991)

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14. "Transient phenomena, self-diffusion and orientational effects in vibrated powders", G C Barker and Anita Mehta, *Physical Review* **E47**, 184 (1993)

15. "Size segregation in vibrated powders", G C Barker and Anita Mehta, *Nature* **361**, 308 (1993)

16. "Friction in vibrated powders - a mechanism for memory", Anita Mehta and R J Needs, *Trans. I. Chem. E.* **71**, A3 245 (1993)

17. "The bouncing ball with finite restitution: chattering, locking and chaos", J M Luck and Anita Mehta, *Physical Review* **E48**, 3988 (1993)

18. Comment on "A three-dimensional model for particle size segregation by shaking", G C Barker, Anita Mehta and M J Grimson, *Physical Review Letters* **70**, 2194 (1993)

19. "Size segregation mechanisms", G C Barker and Anita Mehta, *Nature* **364**, 486 (1993)

20. **Review Article**: "The dynamics of sand", Anita Mehta and G C Barker, *Reports of Progress in Physics* , **57**, 4, 383 (1994)

21. "Disorder, memory and avalanches in sandpiles", Anita Mehta and G C Barker, *Europhysics Letters* **27**, 501 (1994)

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23. "Dynamics of sandpiles: physical mechanisms, coupled stochastic equations and alternative universality classes", Anita Mehta, J M Luck and R J Needs, *Physical Review* **E53**, 92 (1996)

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25. "The dynamics of sandpiles: the competing roles of grains and clusters", Anita Mehta, G C Barker, J M Luck and R J Needs, *Physica* **A 224**, 48 (1996)

26. "Noisy nonlinear coupled equations - some new insights", J K Bhattacharjee, Anita Mehta and J M Luck, *Special Issue on Nonlinearity in the Physical Sciences*, *Pramana* **48**, 749 (1997)

27. "In search of smooth sandpiles - the Edwards-Wilkinson equation with flow", P. Biswas, A. Majumdar, Anita Mehta, and J K Bhattacharjee, *Physica* **A 248**, 379 (1997)

28. "Smoothing of sandpiles surfaces after intermittent and continuous avalanches - three models in search of an experiment", P. Biswas, A. Majumdar, Anita Mehta, and J K Bhattacharjee, *Physical Review* **E58**, 1266 (1998)

29. "Modelling avalanche flows", G C Barker and Anita Mehta, in *IMA Journal of Mathematics applied to Business and Industry* **11**, 139-150 (2000).

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31. "Growth and electronic structure of rough overlayers", A. Mookerjee, B Sanyal, and Anita Mehta, *Physica* **A 270** 143-148 (1999)

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33. 'A two-species model for aeolian sand ripples' Rebecca Hoyle and Anita Mehta *Physical Review Letters*, **83**, 5170 (1999)

34. 'Two types of avalanche behaviour in model granular media', G C Barker and Anita Mehta, *Physica A*, **283** 3/4, 328-336, (2000).

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37. 'Origins of granular memory in model sandpiles', G C Barker and Anita Mehta, *Advances in Complex Systems*, **2**, 339-348, (2000).

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39. 'Anomalous aging phenomena caused by drift velocities', J. M. Luck and Anita Mehta, *Europhysics Letters*, **54**, 573-580, (2001).

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1. "The physics of powders", Anita Mehta in *Correlations and Connectivity* , 88, eds. H E Stanley and N Ostrowsky, (Kluwer Academic Press, Dordrecht, 1990)

2. "Statics and dynamics of granular materials", Anita Mehta, in *Scaling in Disordered Materials* , 58, eds. J P Stokes, M O Robbins and T A Witten, (MRS Symposium Proceedings, 1990)

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5. "Avalanches in real sandpiles - the role of disorder", G C Barker and Anita Mehta, in *Powders and Grains '93*, 315, ed. C. Thornton, (Balkema, Rotterdam 1993)

6. "Segregation phenomena in vibrated powders", G C Barker, M J Grimson and Anita Mehta, in *Powders and Grains '93*, 253, ed. C. Thornton, (Balkema, Rotterdam 1993)

7. "Relaxational dynamics, avalanches and disorder in real sandpiles", Anita Mehta, in *Granular Matter: An Interdisciplinary Approach* , 1, ed. Anita Mehta, (Springer-Verlag, New York, 1994)

8. "Sandpile physics", Anita Mehta in *Lectures on Thermodynamics and Statistical Mechanics*, 214, eds. M Lopez de Haro and C Varea, (World Scientific, 1994).

9. "Smoothing of sandpiles after avalanche propagation", Anita Mehta, in *Structure and Dynamics of Materials in the Mesoscopic Domain* , eds. M. Lal, R. A. Mashelkar, B D Kulkarni and V M Naik (Imperial College Press and the Royal Society, London, 1999), pp 340-352.

10. "Modelling the growth of rough surfaces: coupled continuum equations, electronic structure and magnetic properties", by Anita Mehta, Biplab Sanyal and Abhijit Mookerjee, pp. 280-307, in *Electronic Structure of alloys, surfaces and clusters: systems without lattice translational symmetry*, Advances in Condensed Matter Science, vol. **4**, eds. A. Mookerjee and Dipankar Das Sarma, (Taylor and Francis, 2003)

11. 'Science and Society: The perspective of an Indian woman scientist', Anita Mehta, in *Les scientifiques et les droits de l'Homme* eds. Lydie Koch-Miramond and Gerard Toulouse, Editions de la Maison des sciences de l'homme, Paris, 2003.

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13. 'How the rich get richer', Anita Mehta, A. S. Majumdar, and J. M. Luck, pp. 199-204 in **Econophysics of Wealth Distributions**, Springer-Verlag Italia, Ed. A. Chatterjee, B. K. Chakrabarti and S. Yarlagadda (2005)

14. 'Bridges in vibrated granular media', Anita Mehta, pp 305-317 in 'Vibration Problems ICOVP 2005', edited by Esin Inan and Ahmet Kiris (Springer Proceedings in Physics III, 2006)

15. 'Avalanches and Ripples in Sandpiles', Anita Mehta, pp 387-421 in 'Modelling Critical and Catastrophic Phenomena in Geoscience', ed. Pratip Bhattacharya and Bikas K Chakrabarti, Lecture Notes in Physics **705**, (Springer Berlin, Heidelberg)) (2007)

5 SCIENTIFIC PUBLICATIONS IN NEWSPAPERS/JOURNALS

1. "Withholding no atom's atom", Anita Mehta, **The Telegraph** , (Calcutta, 9 August 1995)

2. "One for all and all for one: the story of Bose-Einstein condensation", Anita Mehta, *The Journal of the Asiatic Society* , **XXXVI**, no. 4, 69 (Calcutta, 1996)

3. "What connects sandpiles, shares and weather?", Anita Mehta, **The Telegraph** , (Calcutta, 23 October 1995)

4. "About time", Anita Mehta, **The Telegraph** , (Calcutta, 15 December 1995) (book review)

5. "A very reasonable physicist: Sir Sam Edwards", Anita Mehta, **The Asian Age** , (Calcutta, 27 September 1996)

6. "Chalking out", Anita Mehta, **The Telegraph** , (Calcutta, 12 September 1997) (book review)

7. "The world in a grain of sand?", Anita Mehta, **The Times Higher Educational Supplement** , (London, 12 December 1997) (book review)

8. "Gems at the cutting edge", Anita Mehta, **The Times Higher Educational Supplement** , (London, 28 May 1998) (book review)

9. "Calculating Queen Dido", Anita Mehta, **The Times Higher Educational Supplement** , (London, 30 October 1998) (book review)

10. "Journey through the minds of scientists", Anita Mehta, **The Times Higher Educational Supplement** , (London, 11 December 1998) (book review)

11. "Maths, the universe and fried-egg theory", Anita Mehta, **The Times Higher Educational Supplement** , p 23, (London, 30 July 1999) (book review).

12. "An inadequate gallery", Anita Mehta, **The Times Higher Educational Supplement** , (London, 28 July 2000) (book review).

13. "Cracks in the glass ceiling", Anita Mehta, **The Statesman**, (Calcutta, 3 May 2004).

14. "The glass ceiling for women scientists in India", Anita Mehta , **Newsletter of the Forum of International Physics of the American Physical Society** (7 July 2006)

15. "As a bracelet melts into gold (Obituary of P.G. de Gennes)" Anita Mehta, **The Hindu** (New Delhi, May 2007).

16. "Science in the Sick Bay", Anita Mehta **The Times of India** (2008)

17. "Physics: no longer a vocation?" Anita Mehta to appear in **Physics Today** (2008)