Professor Gerald N. Nurick

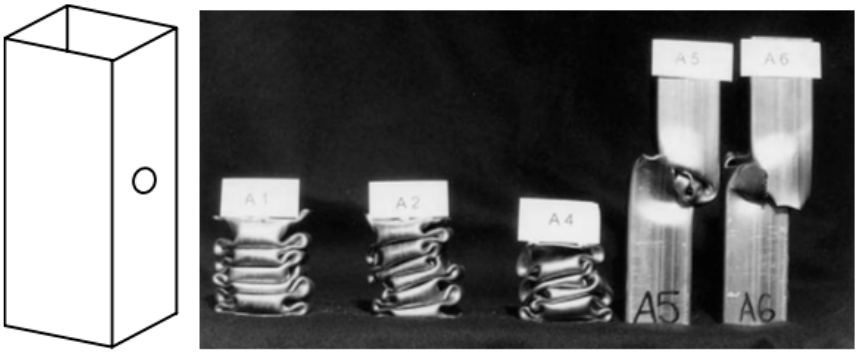

Fig. 10 Quasistatically crushed square tubes with two opposing holes [62] (diameter of the holes increases from left to right—it appears that the size of the first lobe decreases with increasing hole diameter until tearing occurs)

From: Marshall, N., and Nurick, G. N., 1998, "The Effect of Induced Imperfections on the Formation of the First Lobe of Symmetric Progressive Buckling of Thin-Walled Square Tubes," *Structures Under Shock Impact V (SUSI V)*, Computational Mechanics Publications, Southampton, pp. 155–168.

See:
http://www.bisru.uct.ac.za/bisru/groupmembers/staff/profgnurick
https://www.researchgate.net/scientific-contributions/71766866_GN_Nurick

Blast Impact & Survivability Research Unit (BISRU)
University of Cape Town, South Africa

Biography:
Professor Nurick has been working in the field of impact dynamics for over 35 years. During this period he supervised over 70 Post-Doctoral, PhD and MSc students, who are now spread around the world. He has over 100 academic scientific publications covering the following topics; Impact and Blast Dynamics, Crashworthiness, Material Properties at High Strain Rates, Metals and Composites, Human Response and Survivability, Impact on Sports Equipment and Communition (Crushing of Ore Products).
Professor Nurick has served on the Editorial Boards of the International Journal of Impact Engineering, the Latin American Journal of Solids and Structures and the International Journal of Protective Structures. He has also served on the International Scientific Committee of numerous International Conferences around the world.
In 2016 Professor Nurick was awarded an A-Rating from the NRF (National Research Foundation) of South Africa. A-rating is given to researchers who are unequivocally recognised by their peers as leading international scholars in their field for the high quality and impact of their research outputs.
Also in 2016, at the Assembly of the ISIE (International Society of Impact Engineering), Professor Nurick was one of the inaugural group of five elected as Honorary Members of ISIE for lifetime significant contributions to and the development and growth of Impact Engineering activities.
Professor Nurick is a Fellow of the University of Cape Town, Fellow of the South African Academy of Engineers, Honorary Fellow of South African Institution of Mechanical Engineering, Honorary Member of the International Society of Impact Engineering and a Life Member of the Indian Society of Theoretical and Applied Mechanics.

Selected Publications:

Nurick GN. A new technique to measure the deflection-time history of a structure subjected to high strain rates. International Journal of Impact Engineering 1985;3(1):17–26.
Nurick GN. Using photo voltaic diodes to measure the deformation response of a structure subjected to an explosive load, SPIE. High-speed Photography 1986; 674: 215–25.
Nurick GN. The measurement of deformation response of a structure subjected to an explosive load using light interference technique. In: Proceedings of 1986 SEM spring conference on experimental mechanics. The Society of Experimental Mechanics Inc.; 1986. p. 105–14.
Nurick GN, Pearce HT, Martin JB. Predictions of transverse deflections and in-plane strains in impulsively loaded thin plates. International Journal of Mechanical Sciences 1987; 29(6): 435–42.
Nurick GN, Martin JB. Deformation of thin plates subjected to impulsive loading-a review. Part-I: theoretical considerations. International Journal of Impact Engineering 1989; 8(2): 159–169.
Nurick GN, Martin JB. Deformation of thin plates subjected to impulsive loading-a review. Part-II: experimental studies. International Journal of Impact Engineering 1989; 8(2): 170–186.
Nurick GN. An empirical solution for predicting the maximum central deflection of impulsively loaded plates. In: International conference on mechanical properties of materials at high rates of strain. Oxford: Institute of Physics Society; 1989. p. 457–63. No.12, Session: 9.
R.G. Teeling-Smith, G.N. Nurick, The deformation and tearing of thin circular plates subjected to impulsive loads, Int. J. Impact Eng., 11 (1) (1991), pp. 77–91
M.D. Olson, G.N. Nurick, J.R. Fagnan, Deformation and rupture of blast loaded square plates – predictions and experiments, Int. J. Impact Eng., 12 (2) (1993), pp. 279–291
G.N. Nurick, M.D. Olson, J.R. Fagnan, A. Levin, Deformation and tearing of blast-loaded stiffened square plates, Int. J. Impact Eng., 16 (2) (1995), pp. 273–291
G.N. Nurick, M.E. Gelman, N.S. Marshall, Tearing of blast loaded plates with clamped boundary conditions, Int. J. Impact Eng., 18 (7–8) (1996), pp. 803–827
G.N. Nurick, G.C. Shave, The deformation and tearing of thin square plates subjected to impulsive loads – an experimental study, Int. J. Impact Eng., 18 (1) (1996), pp. 99–116
T. Wierzbicki, G.N. Nurick, Large deformation of thin plates under localised impulsive loading, Int. J. Impact Eng., 18 (7–8) (1996), pp. 899–918
Nurick GN, Radford AM. Deformation and tearing of clamped circular plates subjected to localised central blast loads. In: Reddy BD, editor. Recent developments in computational and applied mechanics, A volume in honour of J.B. Martin; 1997. p. 276–301
Marshall, N., and Nurick, G. N., 1998, "The Effect of Induced Imperfections on the Formation of the First Lobe of Symmetric Progressive Buckling of Thin-Walled Square Tubes," Structures Under Shock Impact V (SUSI V), Computational Mechanics Publications, Southampton, pp. 155–168.
Nannucci PR, Marshall NS, Nurick GN. A computational investigation of the progressive buckling of square tubes with geometric imperfections. In: 3rd Asia–Pacific Conference on Shock and Impact Loads on Structures, Singapore, 24–26 November, 1999.
Wiehahn, M.A., Nurick, G.N., Bowles, H.C., 2000 . Some insights into the mechanism of the deformation and tearing of thin plates at high strain rates incorporating temperature dependent material properties. Structures Under Shock and Impact VI SUSI VI , 207-220
Chung Kim Yuen, S., Nurick, G.N., 2000 . The significance of the thickness of a plate when subjected to localised blast load. 16th International Symposium on Military Aspects of Blast and Shock, MABS 16 , 491-499.
T. Franz, G. N. Nurick and M. J. Perr: 'Experimental investigation into the response of chopped strand mat glassfibre laminates to blast loading', Int. J. Impact Eng., 2002, 27, 639–667

N. Jacob, S. Chung Kim Yuen, G.N. Nurick, D. Bonorchis, S.A. Desai, D. Tait, Scaling aspects of quadrangular plates subjected to localised blast loads – experiments and predictions, Int. J. Impact Eng., 30 (8–9) (2004), pp. 1179–1208
V. H. Balden and G. N. Nurick, "Numerical simulation of the post-failure motion of steel plates subjected to blast loading", Int. J. Impact Eng. 32 (2005), 14–34.
Langdon GS, Cantwell WJ, Nurick GN. The blast response of novel thermoplastic-based fibre-metal laminates – some preliminary results and observations. Composites Science and Technology 2005; 65(6): 861–872.
S. Chung Kim Yuen, G.N. Nurick, Experimental and numerical studies on the response of quadrangular stiffened plates. Part I: subjected to uniform blast load, Int. J. Impact Eng., 31 (1) (2005), pp. 55–83
G.S. Langdon, S. Chung Kim Yuen, G.N. Nurick, Experimental and numerical studies on the response of quadrangular stiffened plates. Part II: subjected to localised load, Int. J. Impact Eng., 31 (1) (2005), pp. 85–111
T.J. Cloete, G.N. Nurick, R.N. Palmer, The deformation and shear failure of peripherally clamped centrally supported blast loaded circular plates, Int. J. Impact Eng., 32 (1–4) (2005), pp. 92–117
Karagiozova, D., Nurick, G. N., and Yuen, S. C. K., 2005, "Energy Absorption of Aluminium Alloy Circular and Square Tubes Under an Axial Explosive Load," Thin-Walled Struct., 43 , pp. 956–982.
Langdon GS, Lemanski SL, Nurick GN, Simmons MC, Cantwell WJ, Schleyer GK (2007a) Behaviour of fibre-metal laminates subjected to localised blast loading: Part I – experimental observations and failure analysis. Int J Impact Eng 34(7):1202–1222.
S. L. Lemanski, G. N. Nurick, G. S. Langdon, M. C. Simmons, W. J. Cantwell and G. K. Schleyer: 'Behaviour of fibre-metal laminates subjected to localised blast loading: part II – quantitative analysis', Int. J. Impact Eng., 2007, 34, (7), 1223– 1245.
Langdon GS, Nurick GN, Lemanski SL, Simmons MC, Cantwell WJ, Schleyer GK (2007b) Failure characterisation of blast-loaded fibre-metal laminate panels based on aluminium and glass-fibre reinforced polypropylene. Compos Sci Tech 67(7–8):1385–1405.
Langdon GS, Nurick GN, Cantwell WJ (2007c) Localised blast loading of fibre-metal laminates with a polyamide matrix. Compos Pt B 38(7–8):902–913.
Langdon GS, Nurick GN, Cantwell WJ (2008) The response of fibre-metal laminates subjected to uniformly distributed blast loading. Euro J Mechanics – A/Solids 27(2):107–115.
D. Bonorchis, G.N. Nurick, The effect of welded boundaries on the response of rectangular hot-rolled mild steel plates subjected to localised blast loading, Int. J. Impact Eng., 34 (11) (2007), pp. 1729–1738
N. Jacob, G.N. Nurick, G.S. Langdon, The effect of stand-off distance on the failure of fully clamped circular mild steel plates subjected to blast loads, Eng. Struct., 29 (10) (2007), pp. 2723–2736
S. Chung Yuen and G. N. Nurick, "The Energy-Absorbing Characteristics of Tubular Structures With Geometric and Material Modifications: An Overview", Applied Mechanics Reviews, Vol. 61, No. 2, 020802 (15 pages), March 2008, DOI: 10.1115/1.2885138
G.N. Nurick and S. Chung Kim Yuen., The crushing characteristics of square tubes with blast-induced imperfections, Part II : Numerical Simulations, 2008
S. Chung Kim Yuen, G.N. Nurick and R.A. Starke, The energy absorption characteristics of double-cell tubular profiles, Latin American Journal of Solids and Structures, 5, 289-317, 2008
S. Chung Kim Yuen, G.N. Nurick, W. Verster, N. Jacob, A.R. Vara, V.H. Balden, et al., Deformation of mild steel plates subjected to large-scale explosions, Int. J. Impact Eng., 35 (8) (2008), pp. 684–703
McKown, S., Shen, Y., Brookes, W. K., Sutcliffe, C. J., Cantwell, W. J., Langdon, G. S., Nurick, G. N. and Theobald, M. D. [2008] " The quasi-static and blast loading response of lattice structures," International Journal of Impact Engineering 35(8), 795–810.
M. Y. Yahya, W. J. Cantwell, G. S. Langdon and G. N. Nurick: 'The blast behaviour of fibre reinforced thermoplastic laminates', J. Compos. Mater., 2008, 42, 2275–2297.

S. Bodlani, S.C.K. Yuen, G. Nurick, The energy absorption characteristics of square mild steel tubes with multiple induced circular hole discontinuities—Part II: numerical simulations, J Appl Mech, 76 (2009), p. 041013
D. Bonorchis, G.N. Nurick, The influence of boundary conditions on the loading of rectangular plates subjected to localised blast loading – Importance in numerical simulations, Int. J. Impact Eng., 36 (1) (2009), pp. 40–52
Nurick GN, Langdon GS, Chi Y, Jacob N (2009) Behavior of sandwich panels subjected to intense air blast—part 1: experiments. Compos Struct 91(4):433–441
Karagiozova, D., Nurick, G., Langdon, G.. Behaviour of sandwich panels subject to intense air blasts-part 2: numerical simulation. Composite Structures 2009;91(4):442–450.
Nurick, G., Chi, Y., Langdon, G., Bartle, S., Yuen, S., Karagiozova, D.. Response of flexible sandwichtype panels to blast loading. Composites Science and Technology 2009; 69(6): 754–763.
G.S. Langdon, G.N. Nurick, D. Karagiozova and W.J. Cantwell, "Fiber-metal laminate panels subjected to blast loading", Chapter 9 in Cynamic Failure of Materials and Structures, A. Shukla et al, (editors), Springer, 2010
D. Bonorchis, G.N. Nurick, The analysis and simulation of welded stiffener plates subjected to localised blast loading, Int. J. Impact Eng., 37 (3) (2010), pp. 260–273
GS Langdon, D Karagiozova, MD Theobald, GN Nurick, G Lu, RP Merrett, Fracture of aluminium foam core sacrificial cladding subjected to air-blast loading, Int J Impact Eng, 37 (6) (2010), pp. 638-651
G. S. Langdon, G. N. Nurick, M. Y. Yahya and W. J. Cantwell: 'The response of honeycomb core sandwich panels, with aluminum and composite face sheets, to blast loading', J. Sandwich Struct. Mater., 2010, 12, 733–754.
Chi, Y., Langdon, G., Nurick, G.. The influence of core height and face plate thickness on the response of honeycomb sandwich panels subjected to blast loading. Materials and Design 2010;31(4):1887–1899.
M.D. Theobald, G.S. Langdon, G.N. Nurick, S. Pillay, A. Heyns, and R.P. Merrett, Large inelastic response of unbonded metallic foam and honeycomb core sandwich panels to blast loading, Compos. Struct., vol. 92, pp. 2465–2475, 2010.
S. Chung Kim Yuen, G.N. Nurick and H.L. Witbeen, "The response of sandwich panels made of thin-walled tubes subjected to axial load", International Journal of Protective Structures, Vol. 2, No. 4, pp 477-498, December 2011, DOI: 10.1260/2041-4196.2.4.477
M. Y. Yahya, W. J. Cantwell, G. S. Langdon and G. N. Nurick: 'The blast resistance of a woven carbon fiber-reinforced epoxy composite', J. Compos. Mater., 2011, 45, 789–801.
G.S. Langdon, C.J. von Klemperer, B.K. Rowland and G.N. Nurick, "The response of sandwich structures with composite face sheets and polymer foam cores to air-blast loading: Preliminary experiments", Engineering Structures, Vol. 36, pp 104-112, March 2012
H.H. Jama, G.N. Nurick, M.R. Bambach, R.H. Grzebieta and X.L. Zhao, "Steel square hollow sections subjected to transverse blast loads", Thin-Walled Structures, Vol. 53, pp 109-122, April 2012
Karagiozova, D., Langdon, G.S., Nurick, G.N.: Propagation of compaction waves in metal foams exhibiting strain hardening. Int. J. Solids Struct. 49, 2763–2777 (2012)
G.S. Langdon, D. Karagiozova, C.J. con Klemperer, G.N. Nurick, A. Ozinsky and E.G. Pickering, "The air-blast response of sandwich panels with composite face sheets and polymer foam cores: Experiments and predictions", International Journal of Impact Engineering, Vol. 54, pp 64-82, April 2013
D. Kakogiannis, S. Chung Kim Yuen, S. Palanivelu, D. Van Hemelrijck, W.Van Paepegem, J. Wastiels, J. Vantomme and G.N. Nurick, "Response of pultruded composite tubes subjected to dynamic and impulsive axial loading", Composites Part B: Engineering, Vol. 55, pp 537-547, December 2013
G.S. Langdon, S. Chung Kim Yuen, G.N. Nurick and K. Naidoo, "Some insights into the response of 'shallow V-shape' structures to air blast loading", Proc. Indian Natn Sci Acad., Vol. 79, No. 4, Special Issue Part A, pp 695-703

R.A. Alia, W.J. Cantwell, G.S. Langdon, S.C.K. Yuen, G.N. Nurick, The energy-absorbing characteristics of composite tube-reinforced foam structures, Compos B Eng, 61 (2014), pp. 127–135
S. Chung Kim Yuen, G.N. Nurick, G.S. Langdon, Y. Iyer, Deformation of thin plates subjected to impulsive load: part III – an update 25 years on, Int. J. Impact Eng. (2016)
http://dx.doi.org/10.1016/j.ijimpeng.2016.06.010
M. Saeed Ahmad, G.S. Langdon, G.N. Nurick, S. Chung and Kim Yuen, "A study on the response of single and double circular plates subjected to localized blast loading", Latin American Journal of Solids and Structures, Vol. 15, No. 11, 15 pages, November 2018