

## RESUME

Dr Robin J Batterham

**Roles***May 1999 to present***Chief Scientist of Australia**

- Advises the Australian Government on matters associated with science, engineering and innovation,
- Executive Officer of the Prime Minister's Science, Engineering and Innovation Council,
- Chair of the Standing Committee of the Prime Minister's Science, Engineering and Innovation Council,
- Member of the Commonwealth, States, Territories Advisory Council on Innovation,
- Member of the Coordination Committee on Science and Technology,
- Member of the Cooperative Research Centres Committee,
- Member of the Australian Research Council,
- Member of the Science Prizes Committee,
- Member of Innovation Summit Implementation Group, (2000-2001)
- Member of the Victorian Government's Innovation Economy Advisory Board.
- President of the National Youth Science Foundation,
- Chair of the Reference Group for the science and innovation mapping taskforce,
- Chair of the Consultative Panel, national research priorities taskforce,
- Advisor to the Australian Institute for Commercialisation.

As Chief Scientist of Australia I have a key role in interfacing science, technology and innovation and Government at all levels.

As Chief Scientist I have been asked to undertake various major reviews. A review has been undertaken of marine science in tropical Australia, which resulted in a consolidation of existing work in the area and several new initiatives, eg refurbishment of the Australian Institute of Marine Science, establishment of a new institute in Darwin and refurbishment of the tropical island research stations. A review of the external earnings targets for all government funded research agencies has shown that whilst the target has facilitated connection with end-users, it is now driving inappropriate behaviour. New measures that focus on the impact of the R&D have been proposed.

The largest single activity has been a complete review of the science and technology base of Australia and charting the directions for science and technology in Australia over the next ten years. The review resulted in 20 major recommendations to Government which helped advise the Backing Australia's Ability package, an initiative involving AUD\$3 billion in further R&D, its commercialisation and the like.

In 2002 I again provided advice as the Government considered Backing Australia's Ability: Building Our Future Through Science and Innovation.

**Dec 1999 to present: Chief Technologist, Rio Tinto Limited**

Responsible to the Group Executive Technology for advising on technology policy, strategy and future technology threats and opportunities together with leadership and management of certain research programs undertaken externally to Rio Tinto as well as review of internal technology development programs.

External research selected and funded by the Office of the Chief Technologist has led to breakthroughs in thickener design and operation, to new methods for dewatering tailings, improved recovery in heap leach operations, drastically improved rates of leaching of chalcopyrite as well as a novel barrier technology that enables insitu leaching.

**Aug 1997 to Aug 2001: Managing Director, Research and Technology Support, Comalco**

Responsible for positioning Comalco technically including progressing a balanced portfolio of projects covering process improvement, longer term objectives and external requirements together with leadership and provision of adequate research and technical support facilities for Comalco operations.

**June 1994 to Dec 1999:**

**Vice President, Research & Technology Development, Rio Tinto (incorporating Advanced Technical Development)**

Following the merger of CRA and RTZ in 1995, I became responsible for the corporate research and technology development within the Rio Tinto Group. This included both new process development as well as the improvement of existing processes e.g. mine planning and scheduling, the application of expert systems, mine automation, mineral processing, coal processing, pyrometallurgy, bauxite processing, aluminium production, the production of metals from various sulphide ores, the production of industrial minerals together with supporting technology based on computational fluid dynamics, stockpile modelling, coal process reaction engineering, bio-chemical processing and the like, aluminium smelting, and waste remediation.

The economic treatment of fine-grained zinc minerals was made possible by my leadership of work in ultra fine grinding and in agglomeration and roasting. The scrubbing of gases containing fluoride species using toroidal fluid beds and the re-processing of aluminium smelter waste was brought to fruition under my direct leadership. The application of quantitative mineralogy to mineral processing was shown to be feasible and allowed optimal flowsheet development of several mineral deposits within the Group.

Complementary Roles

- As Chairman of the Organising Committee and President of the International Mineral Congress 1991 to 1994 I was responsible for the largest ever IMPC which was held in Sydney. I am currently a member of the International IMPC Committee and played a pivotal role in winning the 2010 IMPC in Australia. In support of the profession, I have served on numerous committees for the Australasian Institute of Mining and Metallurgy. I have chaired the Publications Committee and was responsible for revitalising their Proceedings Publication. I chaired the initiative to publish a monograph on Australian metallurgy. This was highly successful both technically in describing all existing Australian and New Zealand operations as well as being a financial success. I was an editor (for twelve years) of the International Journal of Applied Mathematical Modelling.
- I have served on the organising committees and international reference committees for various congresses, eg the International Congress of Chemical Engineering – held in Australia 2001 and the Agglomeration conferences held in Canada and the UK. I am currently President of the Institution of Chemical Engineers, in part recognising my international impact in the sustainability debate. I am also a member of the World International Chemical Engineering Council.

- I have served as a member of the Council of the Australian Academy of Technological Sciences and Engineering, a peak body for science and engineering within Australia.
- I am also an organist and hold the post as Organist of Scots' Church in Melbourne. This involves public performances and recordings, both here and overseas as well as rehearsing a professional choir.

Current and Recent  
Board and Committee  
Memberships

- Comalco Aluminium Limited (until 2001)
- Commonwealth Aluminium Corporation Pty Ltd (until 1998)
- Hismelt
- Advanced Diamond Composites (until 1994)
- Southern Copper
- Gulf Minerals and Metals alternate (until 1999)
- GK Williams Cooperative Research Centre, Chairman (until 1997)
- Cooperative Research Centre for Adaptive and Robust Control Systems (until 1995)
- Strategic Industries Foundation alternate (until 1997)
- Thixomat (until 1997)
- Trustee, Sir Ian McLennan Achievement for Industry Award
- Member of Board of Australian National Committee for the South East Asia Iron and Steel Institute (till 2001)
- Australian Mineral Development Laboratories (until 2002)
- Australian Mineral Industry Research Association (until 2001)
- Mineral Industry Research Organisation (UK) (until 2004)
- International Network for Acid Prevention (Chairman)
- Member of the Board of the Australian Minerals and Energy Environment Foundation (until 2002)
- President of the Institution of Chemical Engineers
- Member of the International Mineral Processing Congress.
- Member of the World Chemical Engineering Council

**Mar 1990 to June  
1994**

**Vice President, Resource & Processing Developments**

My responsibility in this position was to a sub-committee of the main Board of CRA and covered the pre-feasibility studies of all major new projects for CRA. This required market evaluation, technical development such as orebody delineation, estimation, mine planning, metallurgical separation, transport, smelting together with financial evaluation and environmental surveys, impact statements and initial marketing.

My primary achievement was the successful development of a processing route for what is now recognised as the world's largest economic zinc mineralisation. This involved leading teams developing the frontiers of ultra-fine grinding, agglomeration and subsequent processing in conventional smelters.

My singular achievement was the acceptance by a small number of leading smelters of the veracity of these developments.

A further achievement during this period was my technical review role in the Hismelt process, a \$650 million project to develop a novel direct smelting technology for iron making. My contributions here were recognised by, inter alia, the award of the Kernot Medal by the University of Melbourne.

During this period I was also made responsible for R&TD in Comalco Aluminium Limited, which was then a 70% Rio Tinto owned subsidiary.

**Feb 1988 – Mar 1990      Group Consultant, Technological Resources**

Various roles associated with major CRA developments.

**1970 to 1988      Research Scientist, Chief Research Scientist then Chief of Division, CSIRO**

My initial appointment was as a Research Scientist followed by successive recognition culminating in appointment as Chief Research Scientist in 1981 and Chief of Division of Mineral and Process Engineering in 1985. My achievements were to lead active teams that collaborated directly with companies in the mining and metallurgical industries to achieve real gains in performance. Direct industry funding for this work was an order of magnitude higher than the then current CSIRO targets. The R&D led to direct improvements in mining, mineral processing, coal processing and transport, agglomeration processes such as sintering and roasting, as well as major developments in iron making.

I was responsible for establishing and maintaining world-class capabilities in all areas of mineral processing. Groups under my direction achieved notable success, including the award of the prestigious Australia prize.

**1968 to 1970      Post Doctoral Fellow, ICI Central Research Laboratories (UK)**

I was awarded a Post Doctoral Fellowship from CSIRO, one of only two per annum awarded. I chose to spend the award at the leading industrial research laboratory in the UK rather than the more normal choice of a prestigious university. During the two years at ICI, I undertook modelling work that resulted in significant plant improvements in the production of explosives, and in intermediates for fibres and plastics. On completion of the two years, I was offered a position as a Research Manager.

During this stay at ICI I developed a method for removing the uncertainty in the scale-up of new processes. This technique became widely and still forms the only reliable method of scaling up of continuous processes.

**Publications**

On average, I have been invited to give opening addresses to international conferences or deliver plenary papers at least once per year for many years.

My own publications cover:

- 82 refereed papers in international journals and conferences
- 271 papers in conferences, non-refereed journals and presentation
- 79 confidential reports covering technical developments
- 17 patents (most of which are patented in several countries)
- 20 contributions to books, course notes and the like

These are detailed as an overleaf.

## Personal Details

*Born:* Brighton, Australia; 3 April 1941

*Secondary Education:* Brighton Grammar School, Melbourne, holder of various scholarships, dux of school

*Tertiary Education:* Melbourne University BE (1965), PhD (1969), A.Mus.A. (Organ, 1986)

*Fellowships /  
Membership of  
Professional Bodies:*

- Fellow of the Australian Academy of Science
- Fellow of the Academy of Technological and Engineering Sciences
- Corresponding Fellow of the Swiss Academy of Engineering Sciences
- Foreign Fellow of The National Academy of Engineering (US)
- Fellow. Institute of Chemical Engineers
- Fellow Institute of Engineers Australia
- Chartered Practising Engineer (Aust.)
- Fellow Australian Institute of Management
- Chartered Engineer (UK)
- Fellow Iron Steel Society of America
- Fellow Australian Institute of Mining and Metallurgy
- Registration Board for Chartered Practising Status of the Australian Institute Mining Metallurgy
- Fellow, Australian Institute of Company Directors
- Chartered Professional Scientist

*Awards:*

- Officer of the Order of Australia
- Centenary Medal of Australia
- Chemeca Medal (2003) from IChemE, IEAust and RACI
- Kernot Medal, University of Melbourne
- Esso Award of Excellence in Chemical Engineering 1992
- CSIRO Post Doctoral Award (spent at ICI, UK)
- President's Medal, Australian Society Sugar Cane Technologists

*Listing:*

- Who's Who in Australia
- Who's Who in Business in Australia
- International Who's who of Professionals
- Dictionary of International Biography
- Australian Men and Women of Science, Engineering and Technology
- Various international listings in Science and Engineering, e.g. Who's Who in Australasia and the Pacific Nations

*Contact:*

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Personal Details  
R J Batterham

*Health:* Extremely good health with a high fitness level.

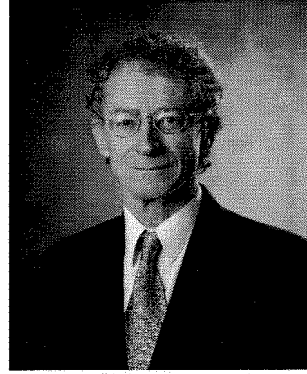
*Other Interests:*

- skiing
- cycling
- music

*Language & Presentation:*

- Highly capable in spoken and written English.
- Minor capability in German.

**Photo:**



## R.J. BATTERHAM PUBLICATIONS

### **International Journals and Published Conference Proceedings**

82. Batterham, R.J., Hollitt M.J., "Production of Primary Metals – Towards Improved Sustainability" European Metallurgical Conference 2003, Hannover, Germany, 18 September 2003.
81. Batterham, R.J., "Ten Years of Sustainability: Where do we go from here?" 17<sup>th</sup> Danckwerts Lecture, London, 25 February 2003 (IChemE) and published in *Chemical Engineering and Science.*, 58 (11), 2167-2179.
80. Batterham, R.J., "Science and Technology in Australia", *Chemistry Australia Magazine* (publication of Royal Australian Chemical Institute-RACI), August 2002.
79. Batterham, R.J., Bates, C.P. and Price, D.P., "Direct Smelting: Why Have So Few Made It?" Published in *Focus*, ed Keith Neill, 2002. Presented at the International Conference on Iron Ore Processing, Kiruna Sweden, June 2002.
78. Batterham, R.J., "The Chemical Engineer and the Community" – Published in *Chemical Engineering: Visions of the World*. Presented at the 6<sup>th</sup> World Congress of Chemical Engineering, Melbourne, September 2001, pp 67-90, chap 4. Published 2003 Elsevier Science B.V.
77. Batterham, R.J., Glazebrook, P., "Green Imperatives in the Mining/Metals Industry : The Approach from Rio Tinto Research and Technology Development", Published in *Chemistry Australia Magazine*, October 1998.
76. Batterham, R.J., Shaw, R.W., "The Impact of Globalisation on the availability of new Mineral Processing Technology". VII International Mineral Processing Symposium, Swissôtel Istanbul, Turkey, 15-17 September 1998.
75. Batterham, R.J., Stokes, A.W., Vassie, R.S., "The Relevance of R & D in Mine Mechanisation and Automation". Fourth International Symposium on Mine Mechanisation and Automation 6-9 July 1997. Brisbane Convention and Exhibition Centre, Brisbane.
74. Batterham, R.J., Hardie, G.H., "CFD and the Real Needs of the Minerals and Metal Processing Industry". International Conference on Computational Fluid Dynamics in Mineral & Metal Processing and Power Generation. Melbourne, 3-4 July, 1997.
73. Batterham, R.J., "The Innovation Process - A Corporate Perspective", Nurturing Creativity in Research - Ideas as the Foundations of Innovation, The first Australian Nature Conference, 26-28 November 1995. (To be published as a Monograph).
72. Batterham, R.J., Algie, S.H., "The Role of Technology in the Minerals Industry", Proceedings of the XIX International Mineral Processing Congress, San Francisco, 22-27 October 1995, pp19, vol.3.
71. Batterham, R.J., Conochie, D.S., "The Energy Intensive Industries - Some Major Australian Initiatives", Australian Academy of Technological Sciences 1995 Symposium, Greenhouse Abatement Measures - No Regrets, Action Now, Melbourne, 17-18 October 1995.
70. Batterham, R.J., Paton, T, P, "The Use of Models in the Design and Operation of Metallurgical plants" APCOM XXV 1995 Conference, Brisbane, 9-14 July, 1995.
69. Batterham, R.J., Bibby, P.G., "Managing for Successful Process Developments", Australian Chemical Engineering Conference and Exhibition, Perth, 25-28 September, 1994.
68. Batterham, R.J., Abbott, J.F., Stone, B.J., "Direct Smelting-Shaping the Iron and Steel Industry in the 21st Century", *Energy World* 220, July/August 1994, Supplement ppi-viii.

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67. Batterham, R.J., "Mineral Economics- A Case for Selectivity, Productivity and Quality, Australian-Asian Pacific Course and Conference Pyrometallurgy for Complex Materials and Wastes, Melbourne 6-8 June, 1994
66. Batterham, R.J., "Australian Metallurgy - Do We Need More or Less?", AusIMM Centenary Conference, Adelaide, 30-March - 4 April 1993.
65. Hardie, G.J., Wright, J.K., Batterham R.J. "Pulverised Coal Based Direct Smelting :- The Hismelt Process", Meeting of the VDEh Blast Furnace Committee, Düsseldorf, 10 March, 1993.
64. Batterham, R.J., Grant, R.M., and Moodie, J.P., "A Perspective on Process Mineralogy and Mineral Processing", PM & MPIC '92 International Conference, 22-25 September, 1992, China.
63. Hardie, G.J., Cross, M., Batterham, R.J., Davis, M.P., and Schwarz, M.P., "The Role of Mathematical Modelling in the Development of the Hismelt Process", 75th Steelmaking, 51st Ironmaking and 10th Process Technology Conferences, 5-9 April, 1992, Toronto.
62. Innes, J.A., Cusack, B. L., Batterham, R.J., Hardie, G.J., Burke, P.D. "The Hismelt process. Adding value to Australia's Mineral Resources". Chemeca '91, Newcastle, September, 1991.
61. Batterham, R.J. "Impediments and opportunities to minerals value-adding in Australia". Value adding in the Australian Minerals Industry. Papers presented Prime Minister's Science Council, 29 October, 1990. Aust. Govt. Publishing Service.
60. Taylor, I.F., Thornton, G.J., and Batterham, R.J. "Process control models for real time applications". Ironmaking and Steelmaking, 1990 12 (6) 438-442.
59. Batterham, R.J., Cross, M., and Thurlby, J.A. 5th International Symposium on Agglomeration. "A Review of Modelling in Agglomeration Systems". September, 1989
58. Batterham, R.J. and Koh, P.T. L., "Liquid Splashes from Submerged Gas Injection Chem. Eng. Res. Des., 67, 211-215, (Published Version). March 1989.
57. Batterham, R.J., Healy, T.W., Reid, A.F., Lay, M., Godson, K., and Brammar, I. "The Encouragement of Better Linkages between Industry and Public Sector Researchers". NSTAG Forum. 1989.
56. Norgate, T.E., and Batterham, R.J. "Design and Operation of Lump Material Handling Systems to Minimize Degradation". Iron and Steel Society. Iron Making Conf. Proc. 47, 1988, 273-280.
55. Sutherland, D.N., Canterford, J.H., Rajakumar, V., Batterham, R.J. and Reid, A.F. "Technology development involving CSIRO and the mining and metallurgy industry". Chemeca '87, Melbourne, 1987, pp.
54. Thurlby, J.A. and Batterham, R.J. "Improving induration processes by mathematical modelling". China-Australian Symposium on Technology of Feed Preparation for Ironmaking, Anshan, China, Conference, May 1987.
53. R.J. Batterham. "Modelling the development of strength in pellets". Metallurgical Transactions B, v. 178, 1986, 479-485.
52. Norgate, T.E., Tomsitt, D.F. and Batterham, R.J. "Computer simulation of the degradation of lump ores during transportation and handling". In Proceedings of the 2nd International Conference on Bulk Materials Storage Handling and Transportation, Wollongong, 7-9 July 1986, pp. 20-24.
51. Batterham, R.J., Thurlby, J.A., Morrison, A.L., Wright, J.K., and Turner, R.E. "Combining Physical Experimentation and Mathematical Modelling Techniques in the Simulation of Induration and Direct Reduction Processes. Proc., 13th Congress, Council of Mining and Metallurgical Institutions, Singapore. May 1986.
50. Rankin, W.J. Roller, P.W., and Batterham, R.J. "Analysis of the permeability of granulated iron sinter feeds using the Ergun equation". Minerals and Metallurgical Processing, 2, No. 1, February 1985, pp. 53-59.



49. Cumming, M.J., Rankin W.J., Siemon, J.R., Thurlby, J.A., Thornton, G.J., Kowalczyk, E.A., and Batterham, R.J. "Modelling and simulation of iron-ore sintering". 4th International Symposium on Agglomeration, Toronto, Canada, June 1985, pp. 763-776.
48. Norgate, T.E., Thurlby, J.A. Batterham, R.J., and Povey, B.C. "Development and validation of dynamic and steady-state models for the vertical shaft induration of iron-ore pellets". 4th International Symposium on Agglomeration, Toronto, Canada, June 1985, pp. 721-728.
47. Batterham, R.J., and Denholm, W.T. "Automatic control of agglomeration and smelting processes. In Symposium on Automation for Mineral Resource Development, Brisbane, 9-11 July 1985. Technical papers pp. 213-222.
46. Wynnycky, J.R., and Batterham, R.J. "Iron-ore sintering and pellet induration processes". 4th International Symposium on Agglomeration, Toronto, Canada, June 1985, pp. 957-994.
45. Rankin, W.J., Roller, P.W., and Batterham, R.J. "A laboratory study of the permeability of granulated iron-ore sinter feeds". Soc. Min. Engrs. of AIME, Annual Meeting, Los Angeles, February-March 1984, 12 pp.
44. Rankin, W.J., and Batterham, R.J. "Mathematical modelling as a research technique in extractive metallurgy". Aus. IMM Extractive Metallurgy Symp., November 1984, pp. 261-267.
43. Hall, J.S., Carey, K.G., and Batterham, R.J. "A laboratory system for comprehensive studies of industrial pelletizing kinetics". Fine Particle Soc., Pacific Region Meeting, Hawaii, August 1983, 17 pp.
42. Rankin, W.J., Roller, P.W., and Batterham, R.J. "Quasi-particle formulation and the granulation of iron-ore sinter feeds". Aus. IMM-ISIJ Joint Meeting, Japan, October 1983, pp. 13-28.
41. Rankin, W.J., Siemon, J.R., Cumming, M.J., and Batterham, R.J. "The modelling of iron-ore sintering". Chemeca '83, Surfers Paradise, 1983, 8 pp.
40. Hall, J.S., Batterham, R.J., and Carey, K.G. "The control of pelletizing in full-scale balling drum operations". Soc. Min. Eng. of AIME, Atlanta Meeting, 1983, 8 pp.
39. Batterham, R.J. "Chemical Engineering Education: the need for emphasis on minerals". Chemeca '83, Surfers Paradise, 1983, pp. 293-296.
38. Thurlby, J.A., Batterham, R.J., and Turner, R.E. "Minimizing energy costs in straight-grate iron-ore pelletization". Ironmaking Steelmaking, 9, 1982, pp. 200-206.
37. Batterham, R.J. Thurlby, J.A. Thornton, G.J., and Norgate, T.E. "The use of mathematical models in the processing of iron ore". Process Technology Conf., 3rd, Pittsburgh, 1982, pp. 110-115.
36. Thornton, G.J., and Batterham, R.J. "Adaptive mathematical models for real-time control of pellet induration processes". Process Technology Conf., 3rd, Pittsburgh, 1982, pp. 69-75.
35. Thurlby, J.A., Thornton, G.J., and Batterham, R.J. "Control system development for a large-scale metallurgical process". Conf. on Control Engineering, 2nd, Newcastle, 1982, pp. 209-213.
34. Thornton, G.J., and Batterham, R.J. "The transfer of heat in kilns". Chemeca '82, Sydney, 1982, pp. 260-266.
33. Norgate, T.E., Batterham, R.J., Thurlby, J.A., and Povey, B.C. "Mixing effects in large-scale packed beds". Chemeca '82, Sydney, 1982, pp. 83-87.
32. Cumming, M.J., Barton, G.W., and Batterham, R.J. "Dynamic simulation of a moving-grate combustion process". IMACS Int. Symp. on Computer Methods for Partial Differential Equations, 4th, Bethlehem, Pa, 1981, pp. 286-292.
31. Batterham, R.J. "Computer control project management". Aust. Soc. Sugar Cane Technologists Conf., Townsville, 1982. Proceedings, 295-299.
30. Thurlby, J.A., Batterham, R.J., and Turner, R.E. "The role of mathematical models and pot-grate simulators in studies of new and existing pelletization plants". Int. Symp. on Agglomeration, 3rd, Nuremburg, 1981. Reprints, B23-B35.

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29. Batterham, R.J., Hall, J.S., and Barton, G.W. "Pelletizing kinetics and simulation of full-scale balling circuits". Int. Symp. on Agglomeration, 3rd, Nuremberg, 1981. Reprints, A136-A150.
28. Turner, R.E., Batterham, R.J., Thornton, G.J., and Thurlby, J.A. "The use of digital computing aids for control of pellet processing". SEASI Centenary Conf., Tokyo, 1981, 8pp.
27. Barton, G.W., Batterham, R.J., and Cumming, M.J. "The use of thermodynamic data in developing a lead-zinc sintering model". Australian Thermodynamics Conf. 2nd, Melbourne, 1981, pp. 82-91.
26. Thurlby, J.A., and Batterham, R.J. "Measurement and prediction of drying rates and spalling behaviour of hematite pellets". Inst. Min. Metall., Trans., Sect. C, 89, 1980, C125-C131.
25. Batterham, R.J., Weller, K.R., Norgate, T.E., and Birkett, C.J. "Screen performance and modelling with special reference to iron-ore crushing plants". Symp. on Size Reduction, 5th, Amsterdam, 1980, pp. 842-857.
24. Batterham, R.J., Thornton, G.J., Thurlby, J.A., Turner, R.E., and Philp, D.K. "Computer-assisted control of pellet induration". AIME Annual Meeting, Las Vegas, 1980. Preprint 80-41, 11 pp.
23. Cumming, M.J., Barton, G.W., and Batterham, R.J. "Simulation of sintering a complex physico-chemical process used in the smelting of sulphide concentrates". Simulation Society of Australia. Proc. 4th Bienn. Conf., Brisbane, 1980, pp. 108-109.
22. Batterham, R.J., and Norgate, T.E. "The use of water to contain dust in the mining and handling of dry ores". Chemeca '80, Melbourne, 1980, pp. 298-302.
21. Barton, G.W., Siemon, J.R., Batterham, R.J., and McLoughlin, B.W. "Improved control of the conditioning stage in lead and zinc sintering". Chemeca '80, Melbourne, 1980, pp/ 30-34.
20. Thurlby, J.A., Batterham, R.J., and Turner, R.E. "Development and validation of a mathematical model for the moving grate induration of iron ore pellets". Int. J. Miner. Process., 6, 1979, pp. 43-46.
19. Sutherland, D.N., and Batterham, R.J. "A viewpoint from engineers in an industrial research organization". Teaching of computer in chemical engineering in Australia: Symposium held in Newcastle, 21 August 1979. Brisbane: University of Queensland, 1979, 8 pp.
18. Batterham, R.J., Thurlby, J.A., and Thornton, G.J. "Optimization of an iron-ore indurator". Chem. Eng. (London), (324), September 1977, pp. 629-632.
17. Batterham, R.J., Smythe, R.L., Turner, R.E., and Thornton, G.J. "A new control technique for the induration of iron ore". Int. Miner. Process. Cong., 12th, Sao Paolo, Brazil, 1977, pp. 120-130.
16. Batterham, R.J., and Wood, D.G. "The effect of return bends on the heat transfer from an internally flowing gas". Australas. Conf. on Heat and Mass Transfer, 2nd, Sydney, 1977, pp. 249-256.
15. Batterham, R.J., and Norgate, T.E. "Boiling point elevation and superheat in impure cane sugar solutions". Int. Sugar J., 77, 1975, pp. 359-364.
14. Batterham, R.J. "The sugar recovery problem". Queensland Soc. Sugar Cane Technologists Conf., 42nd, Mackay, 1975, pp. 255-262. Awarded the QSSCT President's Medal for 1975. Also published in Prod. Rev., 65 (6), 1975, pp. 63-67.
13. Batterham, R.J., Norgate, T.E., Sweett, F.A., and Taylor, R.N. "Nucleation in sugar boiling". Queensland Soc. Sugar Cane Technologists Conf., 42nd, Mackay, 1975, pp. 211-219.
12. Batterham, R.J., Frew, J.A., and Wright, P.G. "Control of vacuum pans". ISSCT Conf., South Africa, 1974, pp. 1-13.
11. Frew, J.A., Batterham, R.J., Allaway, R., and Wright, P.G. "Computer control of a high-grade pan - Mossman 1973". Queensland Soc. Sugar Cane Technologists Conf., 41st, Townsville, 1974, pp. 91-100.

Publications  
R J Batterham

10. Batterham, R.J., Frew, J.A., and Sutherland, D.N. "Control in 2001". Chemeca '74, Surfers Paradise, 1974, pp. 155-160.
9. Batterham, R.J., Frew, J.A., and Wright, P.G. "Computer control of sugar pan crystallizers". Chemeca '74, Surfers Paradise, 1974, pp. 198-207.
8. Batterham, R.J., Frew, J.A., and Wright, P.G. "A systematic approach to the crystallization of raw sugar". Inst. Eng., Aust. Conf., 1974, pp. 57-61.
7. Batterham, R.J., Frew, J.A., and Wright, P.G. "Computer control of high-grade pan". Queensland Soc. Sugar Cane Technologists Conf., 40th, Innisfail, 1973, pp. 71-80.
6. Batterham, R.J., Frew, J.A., and Wright, P.G. "The use of boiling point rise for the control of pans". Queensland Soc. Sugar Cane Technologists Conf., 40th, Innisfail, 1973, pp. 187-192.
5. Batterham, R.J., and Frew, J.A. "Modern control in the production of raw sugar". Fluica '73, Newcastle, 1973, pp. 8-1 to 8-7.
4. Rees, N.W., Frew, J.A., Batterham, R.J. and Thornton, G.J. "Optimal control theory applied to the batch crystallization of sugar". Chem. Eng. J. (Lausanne), 3, 1972, pp. 301-303.
3. Batterham, R.J., Frew, J.A., and Rees, N.W. "The control of vacuum pan crystallizers". Queensland Soc. of Sugar Cane Technologists Conf., 39th, Bundaberg, 1972, pp. 363-368.
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1. Weickhardt, P.L., Ritchie, I.M., Batterham, R.J., and Wood, D.G. "A method of measuring heat fluxes across nickel surfaces using the metal oxide on the surface". J. Sci. Inst. (J. Phys. E.) 1969, Sci. 2, Vol. 2, pp. 1010-1012.

## Unrefereed Conference/ Journals/ Presentations

271. Batterham, R.J. "Renewables – a matter of timescales" - Renewable Energy Generators of Australia Forum, Gold Coast, 11 June 2004
270. Batterham, R.J. "Future of Science" - Melbourne University Council, Melbourne, 7 June 2004
269. Batterham, R.J. "A Chief Scientist perspective" - Minerals Council of Australia Innovation Day, Canberra, 2 June 2004
268. Batterham, R.J. "Strategic context seminar: Leadership in R&D" - Defence Science and Technology Organisation Strategic Context Seminar, Canberra, 25 May 2004
267. Batterham, R.J. "The importance of being innovative" - Australian Innovation Festival, Narrabri, 17 May 2004
266. Batterham, R.J. "How BRS could best contribute to Australia's Science and Technology agenda" - Bureau of Rural Sciences Planning Day, Bungendore, 14 May 2004
265. Batterham, R.J. "The contribution of research to sustainability (with a minerals industry perspective)" - Green Processing 2004, Fremantle, 10 May 2004
264. Batterham, R.J. "Sustainability", Presidential IChemE Address, Rugby, UK, 7 May 2004
263. Batterham, R.J. "Key challenges for Australian science" - Victorian Department of Agriculture Future Science Forum, Melbourne, 29 April 2004
262. Batterham, R.J. "Research, IP and Innovation" - Universitas 21, Brisbane, 27 April 2004
261. Batterham, R.J. "Sustainable Development : A Corporate View from a Chemical Engineer", Sustainable Development Lecture, University of Melbourne, 23 April 2004
260. Batterham, R.J. "APPEA 2004 A Chief Scientist's perspective" - Australian Petroleum Production and Exploration Association, Canberra, 30 March 2004
259. Batterham, R.J. "CSIRO National Research Flagships Dialogue Forum" - CSIRO, Canberra, 30 March 2004
258. Batterham, R.J. "The state of research in Australia compared with overseas and his views on the important issues" - The Pacific Institute, Melbourne, 29 March 2004
257. Batterham, R.J. "A Chief Scientist Perspective: Government Priorities and Drivers" - Minerals Industry Vice Presidents Technology Forum 2004, Melbourne, 25 March 2004
256. Batterham, R.J. "Comminution Challenged for Rio Tinto", Rio Tinto Technical Services, Comminution Workshop 2004, Perth WA, 23 March 2004
255. Batterham, R.J. "A Chief Scientist's perspective - Looking Forward" - Australian Vice Chancellors Committee/ Deputy Vice Chancellors, Canberra, 19 March 2004
254. Batterham, R.J. "Science and Society – the adoption of new technologies – with a focus on sustainability" - Cambridge Society, Melbourne, 17 March 2004
253. Batterham, R.J. "Building our strengths in tropical science" - National Workshop on Tropical Futures, Darwin, 3 March 2004
252. Batterham, R.J. "Management of Process Technology Development, Has Minerals Industrial Technology Peaked?" Society for Mining, Metallurgy and Exploration (SME) 2004, Denver USA, 23 February 2004
251. Batterham, R.J. "The zero emissions vision – a concept within reach" - International Energy Agency Asia Pacific Conference on Zero Emissions Technologies, Gold Coast, 18 February 2004
250. Batterham, R.J. "Inventing the Future", Rio Tinto Business Leadership Development Programme, 16 February 2004
249. Batterham, R.J. "Arafura Timor Research Facility Forum" - Arafura Timor Sea Research Facility, Canberra, 9 February 2004
248. Batterham, R.J. "Hismelt", presented to Leigh Clifford, CEO Rio Tinto Plc, London, 29 January 2004

247. Batterham, R.J. "Mining in the Future : Sustaining humanity in an acceptable manner!", The Lewis Jackling Lecture, University of Utah, Salt Lake City, 16 January 2004
246. Batterham, R.J. "Siemens Science Experience" - Siemens Science Experience Program, University of Melbourne, Melbourne, 13 January 2004
245. Batterham, R.J. "Scaling down to a nano-materials world – challenges for 21st century scientists and engineers" - Oliphant Nanotechnology Conference dinner, Melbourne, 03 December 2003
244. Batterham, R.J. "Grains Research & Development Corporation" - Grains Research & Development Corporation, Canberra, 02 December 2003
243. Batterham, R.J. "Inventing the Future", Rio Tinto Business Leadership Development Programme, 1 December 2003
242. Batterham, R.J. "A Chief Scientist's perspective: science and innovation in Australia 2003" - Scitech, Western Australia Premier's Science Awards, Perth, 21 November 2003
241. Batterham, R.J. "CSTACI, November 2003 A Chief Scientist perspective" - Commonwealth State and Territory Advisory Council on Innovation, Perth, 21 November 2003
240. Batterham, R.J. "Outlook for new energy technologies in Australia" - Sustainable Energy Conference, Melbourne, 14 November 2003
239. Batterham, R.J. "Research priorities – putting policy into practice" - FEAST: Networking for Excellence Conference, Canberra, 13 November 2003
238. Batterham, R.J. "Chief Scientist: some comments" - Australian Nuclear Association Congress, Canberra, 05-06 November 2003
237. Batterham, R.J. "New Generation CEOs: some personal views" - Presentation for New Generation Chief Executive Officer's, Queensland Government, Brisbane, 28 October 2003
236. Batterham, R.J. After dinner speech, Electronics Industry Association Awards, Adelaide, 16 October 2003
235. Batterham, R.J. "The Key Role of Australia's Medical Scientists" - 2003 South Pacific Congress (Australian Institute of Medical Scientists), Gold Coast, 08 October 2003
234. Batterham, R.J. "The Mine of the Future", IMPC Plenary Paper, IMPC Cape Town, South Africa, 3 October 2003
233. Batterham, R.J. Presentation of the Chemeca Medal (pretaped and presented via videotape as R Batterham had overseas commitments), Chemeca 2003, Adelaide, SA., 29 September – 1 October 2003
232. Batterham, R.J. "Spatial knowledge without boundaries" - Spatial Sciences Conference 2003, Canberra, 23 September 2003
231. Batterham, R.J. "Building Australia's research capacity in ageing: some personal thoughts" - National Symposium on Ageing Research - Australian Institute of Health & Welfare, Canberra, 23 September 2003
230. Batterham, R.J. "Competitor Analysis", OCT Paper, September 2003
229. Batterham, R.J. "Production of Primary Metals – Towards Improved Sustainability", European Metallurgical Conference (EMC 2003), Hannover, Germany, 16-19 September 2003
228. Batterham, R.J. "Future direction for Australian science, our niche areas of potential growth" - Australian National University Burgmann College Annual Science Dinner, Canberra, 11 September 2003
227. Batterham, R.J. "Understanding the research climate: the national research priorities" - "Research Week" at Swinburne University, Melbourne, 10 September 2003
226. Batterham, R.J. "ICT - Fast Follower or Fast Follower Plus?" - ICT Outlook Forum, Sydney, 03 September 2003
225. Batterham, R.J. "CSIRO: Beyond Backing Australia's Ability: some personal views about next steps for the research agency" - CSIRO, Canberra, 29 August 2003
224. Batterham, R.J. "Growth opportunities for greenhouse technologies" - Renewable Energy Conference, Sydney, 19 August 2003
223. Batterham, R.J. "Looking to the future: science and technology" - Portfolio Secretaries, Sydney, 8 August 2003

222. Batterham, R.J. "Why should we be interested in research commercialisation?" - UniQuest, Brisbane, 7 August 2003
221. Batterham, R.J. "Chief Scientist current issues" - Industry R&D Board meeting (by teleconference), Hobart, 5 August 2003
220. Batterham, R.J. "e-science: a frontier technology for achieving the National Research Priorities" - CSIRO Glass Earth Conference "Building an Australian Earth & Environmental Science Grid", Canberra, 29 July 2003
219. Batterham, R.J. "Identifying longer-term technical opportunities and threats"., OCT 2004 Strategic Plan, 21-22 July 2003
218. Batterham, R.J. Welcoming comments, XXVth General Assembly of the International Astronomical Union, Sydney, 15 July 2003
217. Batterham, R.J. "The International Network for Acid Protection (INAP) Addressing a Global Need"., ICARD6 Conference, Cairns, 14 July 2003
216. Batterham, R.J. "Some personal views about steps forward for science and innovation" - SA Premier's Research & Science Committee Meeting, Adelaide, 09 July 2003
215. Batterham, R.J. "The CRC Imperative" - Cooperative Research Centre for Innovative Dairy Products, Melbourne, 03 July 2003
214. Batterham, R.J. "Emission Reduction and the Hydrogen Economy – Implications for Rio Tinto"., OCT paper, July 2003
213. Batterham, R.J. "Margin Improvement – A Psychometric Comment"., OCT paper, July 2003
212. Batterham, R.J. "Beyond Backing Australia's Ability: some personal views about next steps for the research sector" - Australian Research Council Federation Fellows Conference, Canberra, 25 June 2003
211. Batterham, R.J. "Backing Australia's Ability: next steps for the higher education sector – some personal views" - Australian Vice Chancellors Committee/ Deputy Vice Chancellors Research Forum, Australian National University, Canberra, 19 June 2003
210. Batterham, R.J. "Research: an investment, not a cost" - Western Australia Science Forum, Perth, 12 June 2003
209. Batterham, R.J. "Leadership in R&D" - Defence Science and Technology Organisation Strategic Concept Seminar, Canberra, 28 May 2003
208. Batterham, R.J. "Thin spread or pillars? Choices for the Northern Territory" - Charles Darwin University Symposium Series, Darwin, 22 May 2003
207. Batterham, R.J. "The Hydrogen Economy: Challenges and strategies for Australia, including the tidal energy link" -Hydrogen Conference, Broome, 21 May 2003
206. Batterham, R.J. "CSTACI, May 2003 A Chief Scientist perspective" - Commonwealth State and Territory Advisory Council on Innovation, Darwin, 16 May 2003
205. Batterham, R.J. "Turning nanoscience into nanotechnology: issues for Australia" - Australian Academy of Science: Nanoscience Symposium, 02 May 2003
204. Batterham, R.J. "What are the gaps in Australia's policy research priorities?" - Facing the Future conference: National Institute of Governance, Canberra, 23 April 2003
203. Batterham, R.J. Graduation speech, University of Melbourne, Melbourne, 16 April 2003
202. Batterham, R.J. "Launch of CSIRO Flagships Program" - BHP Headquarters, Melbourne, 14 April 2003
201. Batterham, R.J. "Innovation: beyond the idea" - Warren Centre, Sydney, 03 April 2003
200. Batterham, R.J. "How might Australia invest its research dollars?" - The Australian Financial Review 'Higher Education Summit', Sydney, 28 March 2003
199. Batterham, R.J. "Australia: applying the first XI principles" - Committee for the Economic Development of Australia, Sydney, 20 March 2003
198. Batterham, R.J. Untitled Munich lecture, Munich, Germany, 1-2 March 2003
197. Batterham, R.J. "Ten Years of Sustainability : Where do we go from here?"., Danckwerts Lecture, London, UK, 25 February 2003

196. Batterham, R.J. Debate and dinner speech on "Sustainability", National Youth Science Summer School, Canberra, 22 January 2003
195. Batterham, R.J. "Refractory Gold", an OCT paper, January 2003
194. Batterham, R.J. "Constructing an Australia that can deal with uncertainty" - AAS Symposium, Canberra, Canberra, 18-19 December 2002
193. Batterham, R.J. "Getting emissions (way) down - Stationary power: a key target" - Ministerial Council on Energy, Brisbane, 29 November 2002
192. Batterham, R.J. "The science education – knowledge economy nexus" - Queensland Science Summit, Brisbane, 29 November 2002
191. Batterham, R.J. "The Chance to Change: the follow on" - Australian Research Management Society, Melbourne, 25 November 2002
190. Batterham, R.J. "Innovation: the next chapter" - Australian Academy of Technological Sciences and Engineering 2002 Symposium, Sydney, 18-19 November 2002
189. Batterham, R.J. "Launch of Sensis GEM Australia 2002 Report" - Global Entrepreneurship Monitor (GEM) Launch, Melbourne, 14 November 2002
188. Batterham, R.J. "The view from the top" - Science meets Parliament day, Canberra, 12 November 2002
187. Batterham, R.J. "Australia moving forward: a Chief Scientist perspective" - The Knowledge Economy Conference, Sydney, 11 November 2002
186. Batterham, R.J. "The future of exploration and mining in Australia" - Mining 2002 Congress, Brisbane, 1 November 2002
185. Batterham, R.J. "The future of the national innovation system and the respective roles of CSIRO and the universities" CSIRO, Sydney, 30 October 2002
184. Batterham, R.J. "IR&D Board" Industry R&D Board, Canberra, 29 October 2002
183. Batterham, R.J. "Commonwealth State and Territory Advisory Council on Innovation" - Commonwealth State and Territory Advisory Council on Innovation, 25 October 2002
182. Batterham, R.J. "A Chief Scientist's perspective: International research collaboration" - The Genome Phenome Australian National University/Australian Research Council Event, Canberra, 23 October 2002
181. Batterham, R.J. "Making innovation a business priority for the bottom line" - Certified Practising Accountants Congress, Melbourne, 22 October 2002
180. Batterham, R.J. "Society's need for brilliant scientists?" - 9th National Conference of the Australian Association for Education of the Gifted and Talented, Sydney, 21 October 2002
179. Batterham, R.J. "Population and sustainability can be a vexatious subject" - All party parliamentary group on population and development, Canberra, 16 September 2002
178. Batterham, R.J. "Using research to drive change: do we start early enough and how do we apply the results?" - South Australia Department of Aged Care, Adelaide, 2 September 2002
177. Batterham, R.J. "Are we serious about the knowledge economy?" Chief Executive Officer Circle Dinner, Sydney, 29 August 2002
176. Batterham, R.J. "Prime Minister's Science, Engineering, and Innovation Council" - National Aquaculture Round Table, Canberra, 23 August 2002
175. Batterham, R.J. "The challenge of change for (regional) Australia – innovation and competitiveness" - University of Ballarat, Ballarat, 22 August 2002
174. Batterham, R.J. "The need to set priorities" - National Research Priorities Expert Advisory Committee, Canberra, 21 August 2002
173. Batterham, R.J. "Science meets Parliament" - Science meets Parliament, Brisbane, 20 August 2002
172. Batterham, R.J. "Lucky? No, but thriving as a 2% country" - Governance and Innovation: Beyond the Australian Predicament, Sydney, 24 July 2002
171. Batterham, R.J. "Research breakthroughs, do we need more, and if so, how do we get them?" - World Congress on Particle Technology, Sydney, 22 July 2002

170. Batterham, R.J. "Owning Innovation" - Australian Academy of Technological Sciences and Engineering, Sydney, 19 July 2002
169. Batterham, R.J. "What future for Australian R&D in the globalisation of science?" - Ian Ritchie Symposium, Murdoch University, Perth, 18 July 2002
168. Batterham, R.J. "The Cluster is the Innovation System" - South Australia Business Vision 2010, Adelaide, 26 June 2002
167. Batterham, R.J. "Bounding beyond Kyoto" - Environment Industry Dinner, Melbourne, 5 June 2002
166. Batterham, R.J. "An Australian perspective on innovation in mining" - Council for Mining and Metallurgical Institutions 2002 Congress, Cairns, 27 May 2002
165. Batterham, R.J. "Future science synergies with art-media-design" - Victorian College of the Arts, Melbourne, 25 May 2002
164. Batterham, R.J. "Capturing Australia's Creativity" - Cooperative Research Centres Association, Sydney, 23 May 2002
163. Batterham, R.J. "Integrating Commonwealth and State R&D Strategies" - Queensland R&D Strategy Leaders Workshop, Brisbane, 21 May 2002
162. Batterham, R.J. "CSTACI" - Commonwealth State and Territory Advisory Council on Innovation, Brisbane, 17 May 2002
161. Batterham, R.J. *Dinner speech* - National Institute of Forensic Science / Australian and New Zealand Forensic Science Society, Canberra, 16 May 2002
160. Batterham, R.J. "Research Libraries: Hatch, match or be dispatched" - State Library of New South Wales, Sydney, 16 May 2002
159. Batterham, R.J. "A vision for the development of science in Australia" - CSIRO Mentoring Program, Melbourne, 14 May 2002
158. Batterham, R.J. "The science vision of sustainability: what is the role of science?" - Australian Academy of Science Sustainability Forum, Canberra, 3 May 2002
157. Batterham, R.J. "Metallurgical Plant: have we run out of developments" - AusIMM Conference, Sydney Convention Centre, Sydney, 15 April 2002
156. Batterham, R.J. "Ideas for future primary industries research in South Australia" - South Australian Primary Industries R&D Board, Adelaide, 12 April 2002
155. Batterham, R.J. "Science, sustainability and the sea: a role for local government" - Bayside Municipalities Dinner, Melbourne, 11 April 2002
154. Batterham, R.J. "Will science and technology deliver sustainability on time?" - ENVIRO 2002, Melbourne Exhibition Centre, Melbourne, 10 April 2002
153. Batterham, R. J. "Priority setting in research" - CSIRO: Sector Advisory Committee, Melbourne, 8 April 2002
152. Batterham, R.J. "Towards a science and technology policy for a dynamic Australian economy" - Melbourne Institute, Melbourne, 5 April 2002
151. Batterham, R.J. "The Commercialisation Challenge" - Australian Institute of Commercialisation, Brisbane, 14 March 2002
150. Batterham, R.J. "A vision for the development of science in Australia Research School of Biological Sciences" - Australian National University, Canberra, 28 February 2002
149. Batterham, R.J. "Linking Australia's Capabilities in Science" - preparation for the International Congress of Genetics 2003, Melbourne, 21 February 2002
148. Batterham, R.J. "SET for a better Australia" - National Youth Science Forum, University of Canberra, 9 January 2002
147. Batterham, R.J. "Science Literacy : vital for Australia's Future" - National Youth Science Forum, University of Canberra, 9 January 2002
146. Batterham, R.J. "Coal in the knowledge economy" - 19<sup>th</sup> Annual Pittsburgh Coal Conference, Newcastle, 4 December 2001
145. Batterham, R.J. "IP and Agriculture" - ACIPA Conference on Intellectual Property & Agriculture - National Gallery, Canberra, 23 November 2001



144. Batterham, R.J. "Are we serious about the knowledge economy?" – CEO Circle Dinner, Stamford Plaza, Melbourne, 22 November 2001
143. Batterham, R.J. "Australia's Education System: *a Chief Scientist perspective*" – Science Teachers Association of Victoria Conference, La Trobe University, 22 November 2001
142. Batterham, R.J. "The Biotechnology Centre of Excellence : Australia's role in science, engineering and technology and emerging industries" – Biotechnology Centres of Excellence Workshop, Rydges, Cronulla Beach, Sydney, 16 November 2001
141. Batterham, R.J. "Australia's Innovation Scorecard" – Aust-Israel Chamber of Commerce, Sheraton Hotel, Perth, 8 November 2001
140. Batterham, R.J. "Higher Education's Role in Boosting Innovation" – Minerals Tertiary Education Council, Melbourne, 7 November 2001
139. Batterham, R.J. "2001: Australia's Science and Technology System *a Chief Scientist perspective*" – Chinese Academy of Science Delegation, University of Technology, Sydney, 31 October 2001
138. Batterham, R.J. "Nuclear Science and Engineering in Australia : a new nuclear century" – Nuclear Science & Engineering in Australia Conference, Millenium Hotel, Sydney, 24-25 October 2001
137. Batterham, R.J. "Science, vital for Australia's future, but what of literacy?" – Sir Harold Wyndham Memorial Lecture, Macquarie University, Sydney, 16 October 2001
136. Batterham, R.J. "A pre-election scorecard" Department of Employment, Training and Youth Affairs, Canberra, 16 October 2001
135. Batterham, R.J. "The Knowledge Economy – Where we are and where to next?" - Australian Venture Capital Association Limited Annual Conference, Gold Coast, 11-12 October 2001
134. Batterham, R.J. "Strategic Technology Roadmapping – strengthening technology co-operation with APEC" – APEC S&T Policy Forum, Penang, Malaysia, 8-9 October 2001
133. Batterham, R.J. "Airborne Gravity Gradiometry – A New Exploration Tool" – Office of the Chief Technologist Paper – October 2001
132. Batterham, R.J. "Commercialising CRC outcomes" – CRC for Polymers, Rydges Riverwalk, Melbourne, 26 September 2001
131. Batterham, R.J. "Chemical Engineering and the Community" – 6<sup>th</sup> World Congress of Chemical Engineering, Melbourne, 25 September 2001
130. Batterham, R.J. "A vision for mining in the 21<sup>st</sup> century" – Essington Lewis Oration, Australian Institute for Mining and Metallurgy, Adelaide, 20 September 2001
129. Batterham, R.J. "Science, Arts and the Humanities: Survive in your own way or excel in a textured environment" – Wolfsohn Memorial Lecture, La Trobe University, 29 August 2001
128. Batterham, R.J. "Science and the community" - Committee for Economic Development in Australia, Sydney, 29 August 2001
127. Batterham, R.J. "Has Australia taken The Chance to Change" – AATSE, Perth, WA, 23 August 2001
126. Batterham, R.J. 'A view from the top' Speech at Science Meets Parliament Day, Parliament House, Canberra, 21 August 2001
125. Batterham, R.J. "A Progress Report" - Sydney University Department of Animal Science, Sydney, 16 August 2001
124. Batterham, R.J. "CRCs and the mining industry" - Cooperative Research Centre for Predictive Minerals Discovery, Sydney, 8 August 2001
123. Batterham, R.J. "Increasing science literacy" - Australian Council for Educational Administration, Canberra, 8 August 2001
122. Batterham, R.J. "Innovation and Learning Transformations: Australia Backing Australia's Ability" – Innovation & Creativity Conference, NZ Innovation & Learning Centre, Auckland, New Zealand, 1-3 August 2001
121. Batterham, R.J. "Innovation in Business" – Innovation & Creativity Conference, New Zealand, NZ Innovation & Learning Centre, Auckland, New Zealand, 1-3 August 2001

120. Batterham, R.J. "Innovation and Creativity" – Innovation & Creativity Conference, New Zealand, NZ Innovation & Learning Centre, Auckland, New Zealand, 1-3 August 2001
119. Batterham, R.J. "Commercialisation of Research: a great base, and now for a factor of 10" – ATICCA, Adelaide, 26 July 2001
118. Batterham, R.J. "A Chief Scientist report card - Innovation and Change" National Pharmaceutical Services Association, Crown Plaza, Terrigal, NSW, 25 July 2001
117. Batterham, R.J. "Science and the Community" – CONASTA, University of Sydney, 10 July 2001
116. Batterham, R.J. "Remote Sensing : Resolving the future" – International Geoscience & Remote Sensing Symposium, Sydney, 9 July 2001
115. Batterham, R.J. Address to the Australian Antarctic Division's annual science retreat, Hobart, 14 June 2001
114. Batterham, R.J. "Clustering and innovation" – The Cluster Conference, The Festival Centre, Adelaide, 1 June 2001
113. Batterham, R.J. "Australia's Innovation System and International Capabilities" – FEAST EU, Canberra, 30-31 May 2001
112. Batterham, R.J. "Business Value from Technology" – Rio Tinto Energy Group Technical Conference, Gillette, USA, 21-24 May 2001
111. Batterham, R.J. "The role of SET in the transforming economy" – National Engineering Forum, Sofitel Hotel, Melbourne, 21 May 2001
110. Batterham, R.J. "R&D: return on investment in Australia" – CRC Association Conference, Perth, 17 May 2001
109. Batterham, R.J. "Locked in the lab? The isolation of Australian Science" – Alfred Deakin Lectures., RMIT Melbourne, 13 May 2001
108. Batterham, R.J. "Entrepreneurising Science and containing the Brain Drain" – Alfred Deakin Lectures, RMIT Melbourne, 13 May 2001
107. Batterham, R.J. "Commercialising Innovation – the second step : going global" – AATSE Commercialising Innovation, Sydney, 10 May 2001
106. Batterham, R.J. "The Next Steps – Science in Australia" – National Press Club, Canberra, 9 May 2001
105. Batterham, R.J. "Science's linkages beyond the lab." – DSTO (Defence) presentation, AFP College, Barton, ACT, 7 May 2001
104. Batterham, R.J. "Connecting vision to reality" – Academy of Science New Fellows Programme, AAS Canberra, 2 May 2001
103. Batterham, R.J. "Research: a vital contributor" – Australian Society of Sugar Cane Technologists Conference, Mackay, 1 May 2000
102. Batterham, R.J. "A new role for superannuation funds in innovation" – Alternative Investment Investors Summit, Australian Stock Exchange, Sydney, 26 April 2001
101. Batterham, R.J. "The knowledge intensity race: are we winning?" – CEDA, Sydney 26 April 2001
100. Batterham, R.J. "Engaging Queensland" - Queensland Food and Fibre Science and Innovation Council, Brisbane, 19 April 2001
99. Batterham, R.J. "Licensing Technology" – ANZ LES Conference, Hyatt Coolum, Qld, 6 April 2001
98. Batterham, R.J. "Underpinning our future: issues of culture, change ....and survival" C&W Optus Foundation, Mecure Grand, Bowral, 1 April 2001
97. Batterham, R.J. "Backing Australia's Ability: its implementation" – AVCAL Conference, Sofitel Hotel, Melbourne, 29 March 2001
96. Batterham, R.J. "Australia's Scientific Research Industry: imperative or option for super funds?" – Scudder Superannuation Forum, Canberra, 20 March 2001
95. Batterham, R.J. "Managing transport assets" – Australian Road Research Board Conference, Melbourne, 19 March 2001

94. Batterham, R.J. "Living in a connected world – The Chance to Change" – Australian Computer Society, Lorne, Victoria, 16 March 2001
93. Batterham, R.J. "Australia's scientific research industry: imperative or option for super funds?" -The Superannuation Industry Forum, Canberra, 15 March 2001
92. Batterham, R.J. "Start-ups and spin-offs: a key role for Go8" – Group of 8 Conference, Canberra, 16 February 2001
91. Batterham, R.J. "Gaining the credibility to participate in 'blue sky' research in a global economy" – CSIRO Mineral Conference, Clayton, Victoria, 15 February 2001
90. Batterham, R.J. "Engaging South Australia" – SA Innovation Council Briefing, Shell House, Adelaide, 9 February 2001
89. Batterham, R.J. "Building the 'new economy'" – CEDA, Melbourne, 7 February 2001
88. Batterham, R.J. "Opportunities in the new economy" – RMIT Business Innovation Day, Melbourne, 6 February 2001
87. Batterham, R.J. "GENEious: Key issues regarding the development and use of GMO's" – National Youth Science Forum, Canberra, 9 January 2001
86. Batterham, R.J. "Australia's Scientific Research Industry : Imperative or Option for Super Funds?" – Superannuation Investment Forum, Sydney, 7 December 2000
85. Batterham, R.J. "Innovation and Australia" – Swinburne Breakfast, Melbourne, 1 December 2000
84. Batterham, R.J. "Excellence and opportunity" – Swinburne Graduate School of Management, Melbourne, 1 December 2000
83. Batterham, R.J. "Australia's Scientific Research Industry: imperative or option for super funds?" – Superannuation Forum, Sheraton Towers, Melbourne, 29 November 2000
82. Batterham, R.J. "The Research Manager's Role in changing the Culture" – ARMS, Hilton Hotel, Brisbane, 24 November 2000
81. Batterham, R.J. "The Chance to Change: Innovation" IPAA Symposium, Melbourne Exhibition Centre, 9 November 2000
80. Batterham, R.J. "The Chance to Change", Australian Council of Deans of Science (ACDS), Canberra, 2 November 2000
79. Batterham, R.J. "Science Meets Parliament – The Chance to Change" Science meets parliament day, Canberra, 31 October 2000
78. Batterham, R.J. "SET, Innovation and the knowledge economy : is mining involved?" – International Conference on Mining and Massine Underground Orebodies, Brisbane, 30 October 2000
77. Batterham, R.J. "Innovation IP and SET" – IP Australia, Sheraton Hotel, Brisbane, 30 October 2000
76. Batterham, R.J. "The Last Chance to Change" – presentation to the Royal Society of Victoria – 19 October 2000
75. Batterham, R.J. "The Chance to Unlock the Future" – Warren Centre, 16 October 2000
74. Batterham, R.J. "The Last Chance to Change" – Warren Centre, 16 October 2000
73. Batterham, R.J. "Future directions for science in Australia" – Australian Research Management Society Victoria, Melbourne University, 6 October 2000
72. Batterham, R.J. "Science and society now and in the future" – Science Symposium, University of NSW, 23 September 2000
71. Batterham, R.J. "The Ideas Infrastructure : the most precious commodity of all" – MINPREX, Carlton Crest Hotel, Melbourne, 11 September 2000
70. Batterham, R.J. "Australia's National Innovation System" - International Technology Innovation Symposium, Beijing, China, 5-7 September 2000
69. Batterham, R.J. "The Chance to Change" –Chief Scientist public consultations, September 2000
68. Batterham, R.J. "Innovation, the Science Capability Review, and issues for commercialisation of university R&D" - Curtin University, Perth, 16 August 2000

67. Batterham, R.J. "Business investment in R&D (BIRD): why BIRD must fly" - Technology and Industry Advisory Council 2000, Perth, 15 August 2000
66. Batterham, R.J. "Need for priorities in R&D" - Fisheries R&D Corporation Board meeting, Fremantle, 15 August 2000
65. Batterham, R.J. "Priorities and Connection: who decides how to spend the government dollar" - CSIRO, Perth, 14 August 2000
64. Batterham, R.J. "Making more commercial outcomes from our SET base: how can the WA and Federal Governments help?" - Western Australian Government Department of Trade and Commerce, Perth, 14 August 2000
63. Batterham, R.J. "Globalisation of technology" - Australian Defence Studies Centre, Canberra, 8 August 2000
62. Batterham, R.J. "Incentives and impediments for meaningful technology cooperation" - TTI 2000, Aust-UK Scientist Delegation, Kings College, London, 12 July 2000
61. Batterham, R.J. "The Innovation Race : is catch up possible? An Australian Perspective" - TTI 2000, Keynote presentation, Kings College, London, 10 July 2000
60. Batterham, R.J. "Australia's Program for Innovation" - TTI 2000, SIRF Roundtable, London, 10 July 2000
59. Batterham, R.J. Presentation to the Management of Technology Research Networking at ANU, 6 July 2000
58. Batterham, R.J. "The Chance to Change" - Business Council of Australia, Sydney, 30 June 2000
57. Batterham, R.J. "National Irrigation Science Network" - NISN, CSIRO, Australian Museum of Sport, MCG, Melbourne, 28 June 2000
56. Batterham, R.J. "Policies for building the knowledge economy" - Committee for Economic Development of Australia, Melbourne, 27 June 2000
55. Batterham, R.J. "Science Capability Review" - CCST, Canberra, 23 June 2000
54. Batterham, R.J. "The Chance to Change and ISIG" - Flinders University presentation, Adelaide, 22 June 2000
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