

# PUBLICATIONS – Ferg Brand

## Books

B<sup>1</sup> G.F. Brand, Tunable gyrotrons. Chapter in *Infrared and Millimeter Waves* vol. 14 (ed. K.J. Button, Academic Press, New York, 1985) pp 371-408

B<sup>2</sup> T. Idehara and G.F. Brand, “Submillimeter wave gyrotron development and applications - Fukui University - University of Sydney collaboration” (Laboratory for Application of Superconducting Magnet, Fukui University, 1995) PUBLISHED IN JAPAN BY EXIT CO. LTD.

B<sup>3</sup> T. Idehara and G.F. Brand, “Submillimeter wave gyrotron development and applications - Fukui University - University of Sydney collaboration Part II” (Research Center for Development of Far-infrared Region, Fukui University, 2000) PUBLISHED IN JAPAN BY EXIT CO. LTD.

B<sup>4</sup> G.F. Brand, Phase singularities in beams (**Chapter 4 of book**) *IUTAM Symposium on Mechanical and Electromagnetic Waves in Structured Media*, Procs of the IUTAM Symposium held in Sydney, NSW, Australia 18-22 Jan 99 (eds R.C. McPhedran, L.C. Botten and N.A. Nicorovici, Kluwer Academic Publishers, Dordrecht, 2001) pp 43-56.

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C<sup>2</sup> G.F. Brand and C.A. Hooker, Propagation of transverse electromagnetic waves in a magnetized laboratory plasma *Phys. Fluids* **11** 455-456 (1968)

C<sup>3</sup> G.F. Brand and C.A. Hooker, Interference of characteristic waves in plasmas *J. Appl. Phys.* **39** 3118-3121 (1968)

C<sup>4</sup> G.F. Brand and C.A. Hooker, Refraction of microwaves obliquely incident on a plasma slab *Plasma Phys.* **10** 644-647 (1968)

C<sup>5</sup> G.F. Brand and C.A. Hooker, Microwave measurements of plasma temperature *Nuclear Fusion* **8** 272-273 (1968)

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- C10 G.F. Brand and D.D. Cohen, Microwave and double-probe density measurements in a reflex discharge *Amer. J. Phys.* **39** 1272-1273 (1971)
- C11 G.F. Brand and D.D. Cohen, Cyclotron harmonic waves in a reflex discharge *Plasma Phys.* **14** 571-574 (1972)
- C12 G.F. Brand and D.D. Cohen, Cyclotron harmonic waves in a reflex discharge *J. Appl. Phys.* **44** 2172-2176 (1973)
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- C18 G.F. Brand, Gyrotron or electron cyclotron resonance maser - an introduction *Amer. J. Phys* **50** 254-258 (1982)
- C19 G.F. Brand, N.G. Douglas, M Gross, J.Y.L. Ma, L.C. Robinson and Chen Zhiyi, Tuneable millimeter-wave gyrotrons *Int. J. Infrared Millimeter Waves* **3** 725-735 (1982)
- C20 G.F. Brand, The gyrotron energy transfer equation *Int. J. Infrared Millimeter Waves* **4** 247-255 (1983)

- C21 G.F. Brand, N.G. Douglas, M. Gross, J.Y.L. Ma and Chen Zhiyi, Frequency detuning measurements in a low power gyrotron *Int. J. Infrared Millimeter Waves* **4** 891-900 (1983)
- C22 G.F. Brand, A gyrotron frequency detuning equation *Int. J. Infrared Millimeter Waves* **4** 919-931 (1983)
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- C31 G.F. Brand and M. Gross, A tunable source of linearly-polarized near-millimetre-wave radiation *Int. J. Infrared Millimeter Waves* **10** 121-136 (1989)
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- C40 T. Idehara, T. Tatsukawa, I. Ogawa, S. Wada, K. Yoshizue, F. Inoue and G.F. Brand, Single mode operation of a submillimeter wave gyrotron at the third harmonic resonance *Phys. Fluids* **B4** 769-770 (1992)
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- C45 K.D. Hong, G.F. Brand and T. Idehara, A 150-600 GHz step-tunable gyrotron. *J. Appl. Phys* **74** 5250-5258 (1993)
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- C49 P.W. Fekete, G.F. Brand and T. Idehara, Scattering from discrete alfvén waves in a tokamak using a gyrotron radiation source *Plasma Phys. Controlled Fusion* **36** 1407-1417 (1994)
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- C58 T. Idehara, Y. Shimizu, S. Makino, K. Ichikawa, T. Tatsukawa, I. Ogawa and G.F. Brand, Amplitude modulation of a submillimeter wave gyrotron output *Int. J. Infrared Millimeter Waves* **18** 391-403 (1997)
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### **International conferences and workshops**

D1 G.F. Brand, Plasma rotation measurements using ion electrostatic waves *US-Australia Workshop on Plasma Waves*, Adelaide, 13-18 Feb 75, (ed. R.C. Cross, Univ. of Sydney, 1975) Paper 25

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D4 G.F. Brand, Z. Chen, N.G. Douglas, M. Gross, J.Y.L. Ma and L.C. Robinson, Research towards a gyrotron tunable from millimeter to submillimeter wavelengths *7th Int. Conf. Infrared and Millimeter Waves* Marseilles, France, 14-18 Feb 83, *Conference Digest* Paper J5-3

D5 G.F. Brand, N.G. Douglas, M. Gross, J.Y.L. Ma and Z. Chen, Frequency detuning measurements in a low power gyrotron *8th Int. Conf. Infrared and Millimeter Waves* Miami Beach, Florida, USA, 12-17 Dec 83, *Conference Digest* (ed. R.J. Temkin, IEEE, New York, 1983) Paper W1-3

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D7 M. Gross, Z.Chen, G.F. Brand, N.G. Douglas, J.Y.L. Ma and L.C. Robinson, A tunable millimetre-submillimetre wave gyrotron *Symp. on Gyrotron Development*, Lausanne, Switzerland, 4-6 Jul 84

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- D<sup>9</sup> G.F. Brand, N.G. Douglas, M. Gross, J.Y.L. Ma, L.C. Robinson and Z. Chen, Absorption spectra of water, ethanol and DNA in solution in the range 100 to 325 GHz *9th Int. Conf. Infrared and Millimeter Waves*, Takarazuka, Japan, 22-26 Oct 84, *Conference Digest* (ed. K. Mizuno, Japan Society of Applied Physics, Tokyo, 1984) Paper Th5-1
- D<sup>10</sup> G.F. Brand and M. Gross, Continuously-tunable, split-cavity gyrotrons *10th Int. Conf. Infrared and Millimeter Waves*, Lake Buena Vista, Florida, USA, 9-13 Dec 85, *Conference Digest* (ed. R.J. Temkin, IEEE, New York, 1985) Paper T8-2
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- D<sup>12</sup> G.F. Brand, Conversion of tunable gyrotron output into a gaussian beam *11th Int. Conf. Infrared and Millimeter Waves*, Pisa, Italy, 20-24 Oct 86, *Conference Digest* (ed. G. Moruzzi, ETS Editrice, Pisa, 1986) pp 340-342
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- D<sup>14</sup> M.D. Bowden, G.F. Brand, I.S. Falconer, P.W. Fekete, B.W. James and K.J. Moore, Scattering of millimetre-submillimetre waves from the TORTUS tokamak plasma *15th European Conf. on Controlled Fusion and Plasma Heating*, Dubrovnik, Yugoslavia, 16-20 May 88, *European Conference Abstracts*, Vol. 12b, Part 3 (ed.S Pestic, J. Jaquinot, European Physical Society, 1988) pp 1099-1102
- D<sup>15</sup> G.F. Brand, Gyrotron IV - A new tunable gyrotron *13th Int. Conf. Infrared and Millimeter Waves*, Honolulu, Hawaii, USA, 5-9 Dec 88, *Conference Digest* Vol 1039 (ed. R.J. Temkin, SPIE, Washington, 1988) pp 183-184
- D<sup>16</sup> M.D. Bowden, G.F. Brand, I.S. Falconer, P.W. Fekete, B.W. James, K.J. Moore and T. Idehara, Scattering of millimetre-submillimetre radiation from the TORTUS tokamak plasma *13th Int. Conf. Infrared and Millimeter Waves*, Honolulu, Hawaii, USA, 5-9 Dec 88, *Conference Digest* Vol. 1039 (ed. R.J. Temkin, SPIE, Washington, 1988) pp 150-151
- D<sup>17</sup> M.J. Ballico, M.D. Bowden, G.F. Brand, M.H. Brennan, R.C. Cross, P.W. Fekete and B.W. James, Alfvén wave experiments on the TORTUS tokamak *16th European Conference on Controlled Fusion and Plasma Physics*, Venice, Italy, 13-17 Mar 89.

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D18 G.F. Brand, Tunable gyrotron development and applications to plasma physics  
*Int. Conf. on Millimeter-Wave and Far-Infrared Technology*, Beijing, China, June 89  
(**Invited keynote**) Conference 'postponed' due to Beijing massacre.

D19 G.F. Brand, Tunable gyrotron development and applications to plasma physics  
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D20 G.F. Brand, P.W. Fekete, K. Hong, T. Idehara and K.J. Moore, GYROTRON IV-  
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applications *2nd Australia-Japan Workshop on Diagnostics for Fusion Plasmas*,  
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D24 K.D. Hong, G.F. Brand, P.W. Fekete and T. Idehara, Submillimetre wave  
generation by second harmonic operation of gyrotrons *2nd Australia-Japan Workshop  
on Diagnostics for Fusion Plasmas*, Canberra, 25-27 Nov 91, pp 24-1

D25 P.W. Fekete, G.F. Brand, K. Hong and T. Idehara, Scattering from rf heated  
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D26 G.F. Brand and T. Idehara, Slow equations for high-harmonic and mode  
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D28 P.W. Fekete, K.D. Hong, G.F. Brand and T. Idehara, Scattering from TORTUS tokamak using a gyrotron *17th Int. Conf. Infrared and Millimeter Waves*, Pasadena, 14-17 Dec 92, *Conference Digest* Vol 1929 (ed. R.J. Temkin, SPIE, Washington, 1992) pp 372-373

D29 J. Khachan, J.R. Pigott, I.S. Falconer, B.W. James, G.F. Brand and I.G. Brown, Simple microwave-produced plasma source for diamond thin film synthesis *20th IEEE Int. Conf. on Plasma Science*, Vancouver, Canada, 7-9 June 93.

D30 M.W. Wouters, M.S. Rice, G.F. Brand, J. Khachan, J.R. Pigott, I.S. Falconer and B.W. James Results from a recently constructed plasma source for diamond deposition *46th Annual Gaseous Electronics Conf.* Montreal, Quebec, Canada, 19-22 Oct 93.

D31 G.F. Brand, G.P. Timms and T. Idehara, Beam focusing for tunable gyrotrons *19th Int. Conf. Infrared and Millimeter Waves*, Sendai, Japan, 17-20 Oct 94 *Conference Digest* (eds K. Sakai and T. Yoneyama, Japan Soc. Appl. Phys.) pp 285-286

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D33 G.F. Brand, Development and applications of frequency tunable submillimeter wave gyrotrons *19th Int. Conf. Infrared and Millimeter Waves*, Sendai, Japan, 17-20 Oct 94 *Conference Digest* (eds K. Sakai and T. Yoneyama, Japan Soc. Appl. Phys.) pp 413-414 (**Invited plenary**)

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