

# CONTENTS OF VOLUME II

	Page
<b>LOWER HYBRID WAVE HEATING AND CURRENT DRIVE</b>	
C. Gormezano, P. Blanc, M. El Shaer, W. Hess, G. Ichtchenko, R. Magne, G. Melin, D. Moulin, P.O'Connor, G.W. Pacher, H.D. Pacher, F. Soeldner, G. Tonon and J.G. Wegrowe	
Lower Hybrid Heating in the WEGA Tokamak .....	439
J.E. Stevens, S. Bernabei, M. Bitter, F. Boody, N. Bowen, A. Cavallo, T.K. Chu, S. Cohen, P. Coletstock, S. Davis, C. Daughney, F. Dylla, P. Efthimion, D. Herndon, E. Hinnov, W. Hooke, J. Hosea, J. Hovey, H. Hsuan, D. Hwang, D. Ignat, F. Jobes, R. Kaita, J. Lawson, A. Martin, E. Mazzucato, D. McNeill, S. Medley, E. Meservey, R. Motley, D. Mueller, D. Ruzic, J. Schivell, F. Schnabl, R. Schwartz, J. Strachan, S. Suckewer, S. von Goeler and R. Wilson	
Lower Hybrid Heating and Current Drive on PLT .....	455
Alcator-C Group M. Porkolab, J.J. Schuss, Y. Takase, S. Texter, C.L. Fiore, R. Gandy, M.J. Greenwald, D.A. Gwinn, B. Lipschultz, E.S. Marmar, D.S. Pappas, R.R. Parker, J.E. Rice, J.L. Terry and S.M. Wolfe	
Lower Hybrid Heating Experiments on the ALCATOR-C and the VERSATOR II Tokamaks .....	469
Versator-II Group S.F. Knowlton, K.I. Chen, S.C. Luckhardt, M.J. Mayberry and M. Porkolab	
Theory Group P.I. Bonoli, B. Coppi and R. Englade	
K. Uehara and T. Nagashima	
Lower Hybrid Heating Experiment in JFT-2 Tokamak .....	485
M. Brambilla	
RAY Tracing in Toroidal Plasmas .....	505

V.K. Decyk, G.J. Morales and J.M. Dawson	Simulation of RF Heating and Current Drive with Lower Hybrid Waves .....	517
S.C. Luckhardt, G. Bekefi, P.I. Bonoli, K.-I. Chen, B. Coppi, R.C. Englade, A.S. Fisher, K. Hackett, S.F. Knowlton, M.J. Mayberry, F.S. McDermott and M. Porkolab J.S. Levine, M.E. Read and V.L. Granatstein	Lower Hybrid RF Current Drive and Electron Cyclotron Heating on the VERSATOR II Tokamak .....	529
K. Ohkubo, S. Takamura and JIPP T-II Group	Lower Hybrid Heating and Current Drive in the JIPP T-II Torus .....	543
M. Bernard and A. Cardinali	Numerical Model for Absorption of LH Waves Including RAY Tracing Analysis .....	559
M. Brambilla and Chen Yan Ping	Quasilinear Absorption of Lower Hybrid Waves .....	565
M. El Shaer, P. Blanc, C. Gormezano, W. Hess, G. Ichtchenko, R. Magne, G. Melin, W.O'Connor, G.W. Pacher, H.D. Pacher, F. Soeldner, G. Tonon and J.G. Wegrowe	Boundary Layer Measurements and Lower Hybrid Coupling Effects in WEGA .....	571
G. Ichtchenko, W.O'Connor, M. Moresco, E. Zilli, A. Vendramin, A. Cardinali, M. El Shaer, C. Gormezano, R. Magne, G. Melin, G.W. Pacher, H.D. Pacher, F. Soeldner, G. Tonon and J.G. Wegrowe	Observation of Lower Hybrid Waves by Coherent Scattering of Microwaves in WEGA .....	577
D. Moreau and T.K. Nguyen	Effect of a Dielectric Shielding on the Radiation Characteristics of a Lower Hybrid "Grill" .....	587
T.K. Nguyen and D. Moreau	Theory of Random Active Passive Waveguide-Array as Lower Hybrid Coupling Structure .....	591
F. Soeldner, G. Melin, C. Gormezano, W. Hess, G. Ichtchenko, G.W. Pacher, H.D. Pacher, G. Tonon and J.G. Wegrowe	Radial Power Balance during Lower Hybrid Heating in WEGA .....	599
S.J. Tanaka, S. Takamura and T. Okuda	Effect of Lower Hybrid Heating on Fast Ion Behavior in a Tokamak .....	607

S. Tanaka, Y. Terumichi, T. Maekawa, M. Nakamura, T. Cho, S. Kubo, T. Shimozuma, H. Kawai and K. Yamazaki	Toroidal Current Drive and Sustainment by Lower Hybrid Waves in the WT-2 Tokamak .....	615
G. Tonon, C. Gormezano, C. Cardinali, M. El Shaer, W. Hess, G. Ichtchenko, R. Magne, G. Melin, D. Moreau, G.W. Pacher, H.D. Pacher, F. Soeldner and J.G. Wegrowe	Lower Hybrid Current Drive with Suprathermal Electrons in the WEGA Experiment .....	623
<b>ELECTRON CYCLOTRON WAVE HEATING</b>		
R. Prater and C.P. Moeller	Electron Cyclotron Heating Results on JFT-2, and their Implications for the DOUBLET III ECH Design .....	635
D.C. Robinson, M.W. Alcock, N.R. Ainsworth, B. Lloyd and A.W. Morris	ECRH Experiments on the TOSCA Tokamak .....	647
K. Uo, A. Iiyoshi, T. Obiki, O. Motojima, M. Sato, T. Mutoh, S. Sudo, M. Iima, H. Kaneko, H. Zushi, S. Besshou, K. Kondo, T. Mizuuchi, M. Nakasuga, K. Hanatani and S. Morimoto	ECR Heating Experiments in HELIOTRON-E .....	667
K. Audenaerde, J. Scharer, N. Lam and J. Beyer	Electron Cyclotron Heating in Weakly Relativistic, Finite- $\beta$ Plasmas .....	677
D.B. Batchelor and R.C. Goldfinger	Ray Tracing Studies of Microwave Heating of the Annulus in EBT I .....	683
M. Bornatici, C. Maroli and V. Petrillo	Electron Cyclotron Bernstein Waves for Quasi-Perpendicular and Oblique Propagation .....	691
M. Fontanesi, C. Maroli and V. Petrillo	Preionization and Preheating for Tokamak Devices at the EC and UH Resonances .....	699
A.H. Kritz, H. Hsuan, R.C. Goldfinger and D.B. Batchelor	Ray Tracing Study of Electron Cyclotron Heating in Toroidal Geometry .....	707
K. Ohkubo, K. Kawahata, N. Noda, I. Ogawa, E. Kako, S..Tanahashi, K. Matsuura, J. Fujita, T. Cho, Y. Terumichi and S. Tanaka	Electron Cyclotron Heating of Stellarator Plasma with the Ordinary and the Extraordinary Modes in JIPP T-II .....	725

S. Tanaka, T. Cho, M. Nakamura, S. Nakao, S. Kubo, T. Shimozuma, H. Kawai, K. Yamazaki, A. Ando, K. Ogura, T. Mackawa and Y. Terumichi	Electron Cyclotron Heating and Preionization in the WT-2 Tokamak .....	733
F. De Luca, A. Jacchia, E. Lazzaro and G. Ramponi	Electron Temperature Profile Control by Electron Cyclotron Resonance Heating .....	741
D. Farina, M. Lontano and R. Pozzoli	Mode Properties in Electron Cyclotron Resonant Heating for Perpendicular Propagation in Presence of Anisotropic Electron Distributions .....	749
R.A. Cairns and C.N. Lashmore-Davies	A Mode Conversion Interpretation of the Absorption of Electron Cyclotron Radiation for Perpendicular Propagation .....	755
G. Faillon, Ph. Guidée and C. Kalfon	Contribution of the Electron Tube Division of THOMSON-CSF to RF Plasma Heating .....	761

## HEATING AND CONFINEMENT

J.P. Girard	Energy Confinement in the TFR Tokamak during Additional Heating : a Possible Explanation .....	771
R. Goldston, S. Kaye, S. Davis, M. Bell, M. Bitter, K. Bol, D. Boyd, W. Brau, N. Bretz, A. Cavallo, P. Colestock, D. Dimock, F. Dylla, P. Efthimion, H. Eubank, M. Finkenthal, R. Fonck, B. Grek, L. Grisham, R. Hawryluk, E. Hinnov, J. Hosea, H. Hsuan, D. Hwang, F. Jobes, D. Johnson, R. Kaita, H. Kugel, D. Manos, K. McGuire, R. McCann, D. McCune, D. McNeil, S. Medley, D. Mueller, E. Meservey, M. Okabayashi, K. Owens, M. Reusch, N. Sauthoff, G. Schilling, J. Schivell, G. Schmidt, F. Stauffer, S. Sesnic, L. Stewart, S. Suckewer, G. Tait, H. Takahashi, F. Tenney, P. Thomas, H. Towner, S. von Goeler, R. Wilson and G. Zankl	Confinement Studies with Neutral Beam Injection on PDX and PLT .....	783
P.P. Lallia and P.H. Rebut	Preliminary Studies on the JET RF Heating System .....	799

W VII-A Team  
G. Cattanei, D. Dorst, A. Elsner,  
G. Grieger, H. Hacker, H. Jaeckel,  
R. Jaenicke, J. Junker, M. Kick,  
R. Lathe, C. Mahn, S. Marlier,  
G. Mueller, W. Ohlendorf, F. Rau,  
H. Renner, H. Ringler, F. Sardei,  
M. Tutter, A. Weller, H. Wobig,  
E. Wuersching and M. Zippe  
and Neutral Injection Team  
K. Freudenberger, G. Lister, W. Ott,  
F.P. Penningsfeld and E. Speth  
*presented by W. Ott*

U. Carretta, S. Corti, M. Lontano  
and R. Pozzoli

Neutral Beam Heating in the W VII-A  
Stellarator and Effects on  
Plasma Confinement ..... 813

Power Balance and Alpha Particle  
Behaviour in the Ignition Phase  
of a Toroidal Discharge ..... 827