

CONTENTS OF VOLUME 2

II

**Nonlinear processes in plasmas
/Theory and microwave experiment/**

V.I.Archipenko, E.Z.Gusakov, A.N.Savel'ev
Coherent parametric phenomena in an inhomogeneous plasma

501

*N.A.Bogatov, M.S.Gitlin, A.G.Litvak, A.G.Luchinin,
G.S.Nusinovich*
Phase conjugation of millimeter-wave radiation by degenerate four-wave mixing in saturable -absorbing media

520

H.Schlüter
Spectroscopic determination of RF field strengths

525

D.M.Karfidov, K.F.Sergeichev, I.A.Sychov
Effective electron collision frequency in plasma with driven strong Langmuir turbulence

541

G.M.Fraiman, I.Yu.Kostyukov
Langmuir soliton damping and pumping by the electron beam

547

*G.M.Batanov, V.A.Ivanov, M.E.Konyzhev, A.A.Ravaev,
V.D.Seleznev, A.I.Khomenko*

Generation of high potentials in the plasma by the interaction with intense microwave radiation

553

L.M.Gorbunov, A.N.Moskalev
Numerical investigation of beat-wave electron acceleration in inhomogeneous plasmas

559

A.M.Sergeev, E.V.Vanin.
Nonlinear dynamics of ultrashort electromagnetic pulses in plasmas

575

S.V.Bulanov, V.I.Kirсанов, A.S.Sakharov
The theory of ultrarelativistic plasma wake excitation by short laser pulses

595

S.V.Bulanov, V.I.Kirсанов, A.S.Sakharov
On the maximum field of the relativistically strong Langmuir wake-wave

615

V.A.Buts, I.I.Lapидус, S.S.Moiseev, O.G.Chkhetiani
Fluctuations, chaos and auto-oscillations in plasma wave systems

621

T.A.Gryaznova, E.G.Filonenko, I.P.Shashurin
The influence of electron density profile on the antenna self-mathing effect with microwave discharge

634

<i>M.Lontano, N.Lunin.</i> Propagation of electromagnetic waves in a modulated density plasma	III 639	IV Development of high - power microwave sources	677
<i>V.P.Silin, S.A.Uryupin</i> Elecromagnetic field cyclotron absorption in a turbulent plasma	645	<i>A.V.Gaponov, M.I.Petelin</i> High-power high-frequency classical electronics: status, trends and problems	693
<i>V.Yu.Bychenkov, V.N.Novikov, V.P.Silin, V.T.Tikhonchuk</i> On the transformation of the energy anisotropy of electrons into the electromagnetic energy of pulsations	651	<i>H.Jory, K.Felch, C.Hess, H.Huey, E.Jongewaard, J.Neilson, R.Pendleton, M.Tsirulnikov</i> Millimeter-wave, megawatt gyrotron development for ECR heating applications	713
<i>S.I.Popel, V.N.Tsytovich</i> On increase of efficiency of plasma heating by an electron beam generating RF waves	656	<i>K.Kreischer, T.Grimm, W.Guss, R.Temkin, K.Y.Xu</i> Research at MIT on high frequency gyrotrons for ECRH	726
<i>S.I.Popel, V.N.Tsytovich</i> New theory of the "spectral gap" filling in the generation process of currents driven by strong RF lower-hybrid waves	660	<i>V.E.Zapevalov, A.N.Kufitin</i> Powerful 80 - 150 GHz gyrotrons	739
<i>Zh.Kiss'ovski, A.Shivarova</i> Effect of the high-frequency field in the drift wave instability	665	<i>T.Nagashima, K.Sakamoto, S.Maebara, M.Tsuneoka, Y.Okazaki, K.Hayashi, S.Miyake, T.Kariya, Y.Mitsunaka, Y.Itoh, T.Sugawara, T.Okamoto</i> Test results of 0.5 MW gyrotron at 120 GHz and 1.5 MW at 2 GHz klystron for fusion applications	751
<i>V.V.Gulenko, V.V.Gushchin</i> On nonlinear interaction of high-frequency and low-frequency waves in confined plasma	669	<i>G.Mourier</i> Current gyrotron development at Thomson Tubes Electroniques	

<i>y</i>	765	<i>y₁</i>	847
<i>V.I.Kurbatov, S.A.Malygin, E.G.Vasilyev</i> Commercial gyrotrons for thermonuclear investigations		<i>O.Dumbrajs, O.A.Elnor</i> Mode selection for a frequency step-tunable gyrotron	
<i>I.I.Antakov, L.A.Aksenova, E.V.Zasypkin, M.A.Moiseev, L.G.Popov, E.V.Sokolov, V.K.Yulpatov</i> Multi-cavity phase-locked gyrotrons for low-hybrid heating in toroidal plasmas	773	<i>Sh.E.Tsimring</i> Axisymmetrical resonators, waveguide tapers and mode transformers for gyrotrons	853
<i>I.I.Antakov, E.V.Zasypkin, A.P.Keyer, V.S.Musatov, V.E.Mjasnikov, E.V.Sokolov</i> Microwave device for low-hybrid heating of toroidal plasmas	779	<i>Y.Aso, J.J.Barroso, P.J.Castro, R.A.Correa, G.O.Ludwig, A.Montes, M.C.A.Nono, J.O.Rossi</i> 35 GHz gyrotron construction at INPE	859
<i>L.A.Aksenova, V.V.Alikaev, V.E.Zapevalov, V.I.Il'in, V.N.Il'in, A.P.Keyer, A.N.Kuftin V.E.Myasnikov, V.A.Flyagin, V.A.Khmara</i> The development of 140 GHz, 1MW CW gyrotrons for ITER	783	<i>V.M.Bykov, V.P.Gubanov, A.V.Rostov, S.D.Korovin, G.A.Mesyats, S.D.Polevin, V.V.Rostov, A.M.Roitman</i> Relativistic pulse-periodic microwave oscillators	866
<i>M.Thumm</i> Electrodynamic systems for mode conversion, transmission and diagnostics of high-power millimeter-wave radiation	791	<i>I.A.Selivanov, A.V.Fedotov, A.G.Shkvarunets</i> The excitation of fundamental mode of coaxial plasma slow-down structure of a PCM-amplifier	872
<i>The CRPP/ABB Quasi Optical Gyrotron Development Group presented by M.Q.Tran</i> Quasi-optical gyrotron development at the CRPP	812	<i>N.I.Karbushev, A.S.Slapakovskii</i> A theory of the dielectric Cherenkov maser with a high-current hollow relativistic electron beam	878
<i>E.Borie, G.Dammertz, O.Dumbrajs, G.Gantenbein, T.Geist, G.Hochschild, M.Kuntze, I.Mobius, H.-U.Nickel, B.Piosczyk, M.Thumm</i> High power 140 Ghz Gyrotrons at KfK	832	<i>V.L.Bratman</i> Cyclotron autoresonance masers	884
		<i>I.Alexeff, M.Rader, F.Dyer</i> A Review of the Development of the Orbitron MASER	903

A.N.Didenko, V.I.Rashchikov

УП

909

High power microwave generation mechanism
in virtual cathode system with anode plasma

*K.G.Kostov, N.A.Nikolov, I.P.Spassovsky,
J.N.Velichkov, V.A.Spassov*

914

An excitation of transverse electric (TE)
modes in magnetized vircator system

T.J.Orzechowski

921

Intense microwave generation using
free-electron lasers

G.P.Gallerano

938

High power high efficiency mm-wave FEL for
ECRH in plasma

N.S.Ginzburg

954

Optical guiding and superradiance effects in
spatial localized ensembles of electron -
oscillators

N.I.Karbushev, A.D.Shatkus

974

Canalization of radiation by transversely
bounded beam-plasma slab

V.I.Miroshnichenko, Ya.B.Fainberg

980

Stimulated scattering of an extraordinary
electromagnetic wave by an electron beam in
a magnetized plasma