

PHYSICS– USPEKHI



English edition of *Uspekhi Fizicheskikh Nauk*
 June 1999 Volume 169 Number 6

Contents

Volume 42
Number 6
1999
Pages 515–621

TO THE 275th ANNIVERSARY
 OF THE RUSSIAN ACADEMY OF SCIENCES

**On the celebration of the jubilee year of
 the Russian Academy of Sciences (1724–1999)**

515

REVIEWS OF TOPICAL PROBLEMS

The problem of phase transitions in statistical mechanics 517
 G A Martynov

**Approximate equations of the theory of liquids in the statistical
 thermodynamics of classical liquid systems** 545
 G N Sarkisov

PHYSICS OF OUR DAYS

The puzzle of the lightest elements: observations, predictions, hypotheses 563
[Ya M Kramarovskii, V P Chechey]

METHODOLOGICAL NOTES

**Irreversibility and the probabilistic treatment of the dynamics
 of classical particles** 573
 S N Gordienko

Qualitative intramolecular quantum dynamics 591
 A V Burenin

**On the quantum description of the linear kinetics
 of a collisionless plasma** 603
 M V Kuzelev, A A Rukhadze

Continued overleaf

Contents continued

CONFERENCES AND SYMPOSIA

**Scientific session of the Division of General Physics and Astronomy
of the Russian Academy of Sciences (27 January 1999)**

Quantum computers: can they be made 'large'?	607
K A Valiev	
Phase transitions and critical phenomena in condensed media	611
I K Kamilov, A K Murtazaev	
On Russian conferences on cold fusion and nuclear transmutation	615
A V Arzhannikov, G Ya Kezerashvili, É P Kruglyakov	

PERSONALIA

In memory of Venedikt Petrovich Dzhelepov	617
A M Baldin, S T Belyaev, S Gershtein, M V Danilov, V G Kadyshevskiĭ, A A Logunov, V A Matveev, L I Ponomarev, A N Sisakyan, A N Skrinskiĭ, A N Tavkhelidze, D V Shirkov	

BIBLIOGRAPHY

New books on physics and related sciences	619
E V Zakharova	
Physics news on the Internet	621
Yu N Eroshenko	

Contents

On the celebration of the jubilee year of the Russian Academy of Sciences (1724–1999)	515
The problem of phase transitions in statistical mechanics	517
G A Martynov	
Approximate equations of the theory of liquids in the statistical thermodynamics of classical liquid systems	545
G N Sarkisov	
The puzzle of the lightest elements: observations, predictions, hypotheses	563
Ya M Kramarovskii, V P Chechov	
Irreversibility and the probabilistic treatment of the dynamics of classical particles	573
S N Gordienko	
Qualitative intramolecular quantum dynamics	591
A V Burenin	
On the quantum mechanical description of the linear kinetics of a collisionless plasma	603
M V Kuzelev, A A Rukhadze	
Scientific session of the Division of General Physics and Astronomy of the Russian Academy of Sciences (27 January 1999)	607
Quantum computers: can they be made ‘large’?	607
K A Valiev	
Phase transitions and critical phenomena in condensed media	611
I K Kamilov, A K Murtazaev	
On Russian conferences on cold fusion and nuclear transmutation	615
A V Arzhannikov, G Ya Kezerashvili, É P Kruglyakov	
In memory of Venedikt Petrovich Dzhelepov	617
New books on physics and related sciences	619
Physics news on the Internet	621

◇

◇

◇

In the next issue

Gauge mechanism of mediation of supersymmetry breaking
D S Gorbunov, S L Dubovskii, S V Troitskii

Quantum tunneling multilayers and heterostructures with ferromagnetic semiconductors?
A S Borukhovich

AC-Stark shift of atomic levels
N B Delone, V P Kraïnov

Monte Carlo studies of phase transitions and critical phenomena
I K Kamilov, A K Murtazaev, Kh K Aliev

Effects of unidirectional exchange anisotropy in ferrites
K P Belov

Conferences and symposia

Personalia

