

ОГЛАВЛЕНИЕ. CONTENTS

Секция Г. Свойства гелия

Section H. Properties of Helium

Вступительное слово (П.Л.Капица)	4
Presentation address for the Fifth Fritz London Award (Henry A.Boorse, Chairman, Committee for Fifth Fritz London Award)	I6
On bad luck in attempts to make scientific discoveries (C.J.Gorter)	I9

Invited Papers

Dissipation and critical velocities in superfluid helium (E.F.Hammel, W.E.Keller)	30
Dilute solutions of He^3 in He^4 at low temperatures (D.Pines, J.C.Wheatley)	55
Ions and vortices in liquid helium (F.Reif)	86
Релаксационные явления и дисперсия звука в сверхтекучем гелии (И.М.Халатников, Д.М.Черникова) Н35	II7
к вопросу о фазовом переходе во вращающемся жидким гелии (Э.Л.Андроникашвили) Н59	I38
Superfluid helium in films and micropores (D.F.Brewer)	I45

H1. Установка для получения сверхнизких температур в стационарном режиме, основанная на растворении He^3 в He^4 (Н.С.Борисов, Н.И.Квиткова, М.Ю.Либург, Б.С.Неганов Ф.А.Тагирова)	I61
H2. О криостате, работающем на теплоте перехода He^3 из раствора богатого He^3 в раствор богатый He^4 (В.П.Пешков)	I62
H3. Cooling by adiabatic demagnetization of a nucleay spin sistem (J.M.Goodkind and E.B.Osgood)	I67
H4. Magnetic temperature scale, $0.002^\circ - 5^\circ\text{K}$ (R.P.Hudson, R.S.Kaeser)	I71
H6. Viscosity of liquid helium-3 (M.A.Black, H.E.Hall, K.Thompson)	I74
H7. The effect of pressure on transport in semi-degenerate He^3 and He^4 (D.S.Betts)	I78
H10. Superfluidity and particle accelerators (H.A.Schwettman, W.M.Fairbank)	I84
H11. The separation of He^3 from $\text{He}^3 - \text{He}^4$ mixtures (R.H.Sherman)	I88
H12. The behaviour of positive and negative ions under pressure (I.Modena, A.Savoia and F.Scaramuzzi)	I92
H13. Measurements of the mobilities of positive and negative ions near the lambda point (D.T.Grimsrud and F.Scaramuzzi)	I97
H14. Drift velocity discontinuities of ions in liquid helium between 1.1°K and temperature (L.Bruschi, P.Mazzoldi and M.Santini)	202
H15. Ion trapping in vortex rings below 1°K (miss A.J.P.T.Arnold, M.V.Ricci and J.S.Rosenstein)	205
H16. Persistence of the drift velocity of negative ions in liquid He II (L.Bruschi, B.Maraviglia, P.Mazzoldi and M.Santini)	210
H17. Normal fluid flow parallel to drifting ions in liquid He II (J.A.Cope and P.W.F.Gribbon)	214
H18. Potential barrier to negative ions at the helium liquid-vapour interface (L.Bruschi, B.Maraviglia and F.E.Moss)	219

H19. Механизм переноса зарядов в жидким гелием (Р.П.Архипов)	223
H21. О движении зарядов в твердом гелии 3 и 4 (З.Иффт, Л.Меков-Деглин, А.Шальников)	224
H22. Charge trapping by a vortex line in superfluid helium (T.Soda)	233
H23. Influence of small amounts of He ³ on the escape of negative ions trapped in rotating HeII (R.L.Douglass and C.le Pair)	239
H24. Calorimetric measurements on liquid He ⁴ under pressure down to 0.3°K (J.Wiebes and H.C.Kramers)	243
H25. Deviations from the Weber-Schmidt equation for thermomolecular pressure difference of He ³ and He ⁴ (G.T.McConville, R.A.Watkins, W.L.Taylor)	248
H26. Thermal expansion and compressibility of solid He (E.R.Grilly)	253
H27. Coefficient of thermal expansion of solid He ⁴ (J.Jarvis and H.Meyer)	258
H28. О кристаллизации растворов изотопов гелия (Н.Г.Бере- зняк, И.В.Богоявленский, В.С.Коган, Л.Ф.Якименко)	263
H29. The interpretation of phonon-phonon interactions (J.A.Reissland and D.Ray)	267
H30. Исследование температурной и концентрационной зависи- мостей плотности нормальной компоненты растворов He ³ -He ⁴ (В.Н.Григорьев, Б.Н.Есельсон, В.П.Мальханов, В.И.Соболев). .	273
H31. On the T ⁴ - law for the density of the normal component in bose liquids (K.Kehr)	278
H33. Theory of quantum crystals (J.H.Hetherington, W.J.Mullin and L.H.Nosanow)	285
H34. Superfluidity of a dense liquid (D.J.Thouless)	291
H36. Ultrasonic velocity and dispersion in liquid helium II (W.M.Whitney and C.E.Chase)	294
H37. Second sound in solid helium (C.C.Ackerman, B.Bertman H.A.Fairbank and R.A.Guyer)	298

H38. The attenuation of sound in liquid helium below 1°K (B.M.Abraham, Y.Eckstein, J. Ketterson and J.Vignos)	299
H39. The propagation of zero sound through liquid He ³ (W.R.Abel, A.C.Anderson and J.C.Wheatley)	304
H41. Sound propagation in solid helium (F.P.Lipschultz and D.M.Lee)	309
H42. Third sound on a moving liquid helium film (K.R.Atkins and K.A.Pickar)	313
H43. Kinetics of the evaporation of liquid helium II (D.V.Osborne and G.H.Hunter)	317
H44. Small angle x-ray scattering from liquid He ³ (Nareshchandra Shah, R.B.Hallock, W.A.Little)	322
H45. The dielectric constant of He ³ (E.C.Kerr and R.H.Sherman)	325
H46. The spectral density for Zeeman exchange relaxation in solid helium three (A.Landesman, R.C.Richardson, E.Hunt and H.Meyer)	332
H47. Theory of spin waves and self-diffusion in liquid helium three (D.R.Fredkin and J.M.Goodkind)	337
H48. Nuclear susceptibility of He ³ adsorbed in micropores (A.L.Thomson, D.F.Brewer, P.J.Reed)	338
H49. The nuclear susceptibility and spin diffusion coefficient of dilute He ³ -He ⁴ liquid solutions (D.L.Husa, D.O.Edwards and J.R.Gaines)	345
H51. Nuclear magnetic susceptibility and relaxation times of a dilute solid mixture of He ⁴ in He ³ (H.D.Cohen and W.M.Fairbank)	350
H52. О спаривании с ненулевым орбитальным моментом в Ферми-системе (И.А.Приворотный, С.В.Чесноков)	355
H53. Low temperature properties of paramagnetic Fermi liquids (S.Doniach, S.Engelsberg and M.J.Rice)	356
H54. К теории поглощения четвертого звука в Не-II (Д.Г.Санкидзе, И.Н.Адаменко, М.И.Каганов)	360
H55. Скорость четвертого звука в растворах Не ³ -Не ⁴ (Б.Н.Есельсон, Н.Е.Дюмин, Э.Я.Рудавский, И.А.Сербин)	365

H56. О распространении четвертого звука в гелии вблизи λ-точки (Дж.Г.Саникидзе)	371
H57. On collective modes of vortex systems in superfluid Fermi systems (E.Cane)	376
H58. Теория дисперсии теплопроводности диэлектриков (В.Л.Гуревич, А.Л.Эфрос)	377
H60. Helium in rotation (L.B.Borst)	378
H61. Phenomena in rotating helium near the λ-point (J.R.Pellam)	383
H62. Вовлечение жидкого гелия во вращение (Г.В.Гудабидзе, Л.В.Черемисина, Дж.С.Цакадзе)	389
H63. Определение коэффициента скольжения вихрей во вра- щающемся гелии II (Г.А.Гамцемлидзе, Ш.А.Джапаридзе, Ц.М.Салуквадзе, К.А.Туркадзе)	394
H65. Positronium induced cavity formation in liquid and gaseous helium (L.O.Roellig and T.M.Kelly)	401
H66. Positron induced condensed helium in low temperature helium gas (L.O.Roellig and T.M.Kelly)	406
H67. Recent experiments on anomalous scintillation effects in He II (F.L.Herford, F.J.Agee R.J.Manning, F.E.Moss and J.S.Vinson)	410
H68. Rotating liquid helium films (K.R.Atkins and R.E.Little)	420
H69. Neutron inelastic scattering from liquid helium (A.D.B.Woods)	422
H70. Angular momentum defect in rotating helium II (G.B.Hess, W.M.Fairbank)	423
H71. Critical heat currents associated with formation and breakdown of stable vortex sheet in helium II (Erna M.J.Herrey)	428
H72. Transverse component of mutual friction in uniformly rotating liquid helium II (P.Lucas)	434
H73. Height dependence and fine structure of helium film transfer rates (J.F.Allen and J.G.M.Armitage)	439
H74. Vorticity in helium flow through orifices (G.Careri, M.Cerdonio and F.Dupre)	444

H75. Dissipation in the flow of the helium film (W.E.Keller and E.F.Hammel)	447
H76. The observation of the superfluid critical velocity in He II by means of energy dissipation in wide channels in which the normal component is kept at rest (W.M.van Alphen, J.F.Olijhoek, R.de Bruyn Cubotter and K.W.Taconis)	452
H77. Development of turbulence in superfluid helium (P.A.Dziwornooh and K.Mendelssohn)	454
H78. Flow rate vs.pressure drive in superfluid helium (M.Chester, D.R.Williams and S.C.Choudhery)	459
H79. Устойчивость вихревых решеток (В.К.Ткаченко)	464
H81. Temperature independent critical velocity for helium counterflow in wide channels (M.V.Ricci and M.Vicentini-Missoni.)	465
H83. Hydrodynamics of rotating He II in annulus (A.L.Fetter)	469
H84. The behaviour of quantized vortex rings of low energy at 0.3°K (L.Meyer)	473
H85. A study of quantized vortices in liquid helium II (M.P.Kawatra and R.K.Pathria)	478
H86. Аналог постоянного тока Джозефсона в жидком гелии (Д.Г.Мамаладзе, О.Д.Чеймвли)	487
H87. Проникновение сверхтекучести в "нормальную" область (Л.В.Кинчадзе, Д.Г.Мамаладзе, О.Д.Чеймвли)	491
H88. Heat capacity of He^3 and He^4 monolayers and partial monolayers from 0.25° to 4°K (J.G.Dash, D.L.Goodstein, W.D.McCormick and G.A.Stewart)	496
H89. The superfluid density of helium II in the neighborhood of the λ -transition (J.D.Reppy and J.R.Clow)	500

H90. Helium films in nitrogen-plated micropores (A.L.Thomson, D.F.Brewer, A.Evenson)	507
H91. The velocity of sound in the immediate neighborhood of the lambda transition of helium (M.B.Barmatz and I.Rudnick)	512
H92. Coefficient of thermal expansion of liquid helium-4 close to the lambda line (D.Elwell and H.Meyer)	517
H93. The coexistence curve of He^4 above $0.98 T_c$ (M.H.Edwards)	522
H96. Scaling laws near critical points (L.P.Kadanoff)	527
H97. О некоторых особенностях поведения He^4 вблизи -точки (В.П.Шемков, А.П.Боровиков)	535