

# BRITISH CHEMICAL AND PHYSIOLOGICAL ABSTRACTS

## Foreword.

Section "A" of the abstracts, dealing with pure chemistry and physiology, will be issued to Fellows of the Chemical Society and other subscribers at the end of each month, in three separate sections: A., I, General, Physical, and Inorganic Chemistry and Geochemistry; A., II, Organic Chemistry; A., III, Physiology and Biochemistry. Each section will be paginated separately and have its own monthly author index.

Section "B," covering applied chemistry, will appear at the end of each month, and will be circulated with the *Transactions of the Society of Chemical Industry* to members of that Society and to special subscribers.

The price of the "A" abstracts is £6 per annum, including joint Index, or £2 5s. for section A., I or A., II, and £3 5s. for A., III. The price of the "B" abstracts is £4 per annum, including joint Index. Fellows of the Chemical Society may obtain the "B" abstracts for £1 15s. 0d., whilst Members of the Society of Chemical Industry may obtain the "A" abstracts for £2 15s. 0d. All these prices are post free. [The yearly membership subscriptions are £3 0s. 0d. in the case of the Chemical Society and £2 10s. 0d. in the case of the Society of Chemical Industry.] Copies of "A" or "B" abstracts printed on one side of the paper, and suitable for filing purposes, may be obtained at reasonable charges.

The general basis of classification adopted in the various sections is printed below. For the guidance of readers of "A" abstracts, it should be pointed out that abstracts of analytical papers may be found not only at the end of each section as tabulated below, but sometimes also, when the analytical method described has a very specialised object, in the body of the section, according to the material with which the analytical method deals.

In order to facilitate reference to the "A" abstracts, the appropriate number and letter (i c, iv d, etc.), as shown in the accompanying statement, will be printed at the top of each page on which the respective abstracts appear.

### A.—PURE CHEMISTRY AND PHYSIOLOGY.

#### I. General, Physical, and Inorganic Chemistry.

##### i. Sub-atomics.

- (a) Atomic spectra. Infra-red, visible, ultra-violet, X-ray emission and absorption spectra, Zeeman and Stark effects. Compton effect.
- (b) Electrical properties: Ionisation potentials of atoms, photo-electric and thermionic effects.
- (c) Properties of electrons, positrons, and gaseous ions. Magnetic properties. Ramsauer effect.
- (d) Isotopes—atomic weights.
- (e) Radioactive processes. Neutrons.
- (f) Other sub-atomic processes. Artificial radioactivity. Nuclear chemistry. Cosmic rays.
- (g) Theories of atomic structure and sub-atomic mechanism.
- (h) Atomic dimensions (except in solid state).

##### ii. Molecular Structure.

- (a) Molecular spectra: Emission and absorption spectra of organic and inorganic substances. Fluorescence, luminescence, and phosphorescence. Raman effect.
- (b) Ionisation potentials. Photo-electric effect with compounds. Rectifiers.
- (c) Conductivity. Dielectric constants. Dipole moment. Electrets.
- (d) Molecular volumes.
- (e) Optical properties: Molecular refraction, dispersion, rotatory dispersion, optical activity, magnetic rotation. Kerr effect.
- (f) Theories of molecular structure. Valency, secondary valency, including co-ordination, electronic and magnetic theories, constitutional formulæ of inorganic substances. Deuterium and its compounds.
- (g) Molecular sizes and forces. Surface tension. Molecular beam. Parachor.

##### iii. Crystal Structure.

- (a) X-Ray examination.
- (b) Crystal models. X-Ray results for elements and compounds. Electron diffraction.
- (c) Magnetic and electrical properties of crystals: piezoelectricity; magnetostriction; Hall effect; Barkhausen effect; tribo-electricity.
- (d) Optical properties. Rotatory dispersion.
- (e) Compressibility. Tensile strength. Plasticity.
- (f) Mesomorphic state; allotropy; monotropy.

##### iv. Physical Properties of Pure Substances (not included above).

- (a) Molecular weights.
- (b) Electrical constants: Conductance, superconductivity, thermoelectric power, light-sensitivity, etc. Magnetic susceptibility. Sonic properties.
- (c) Optical constants.
- (d) Thermal constants: Specific heats, heat of change of state, boiling points, freezing points, transition points.
- (e) Chemical constants.
- (f) Pressures and volumes: Density, vapour pressure, coefficient of expansion, equations of state, theory of corresponding states, critical state. Heat-conductivity. Thermal accommodation. Joule-Thomson effect.
- (g) Compressibility.
- (h) Viscosity; fluidity; plasticity.
- (i) Diffusion.

##### v. Solutions and Mixtures.

- (a) Gaseous mixtures, liquid mixtures (excluding dilute solutions), solid solutions (including alloys), property-composition curves.
- (b) Miscibility of liquids and of solids. Solubility of gases and solids in liquids.

- (c) Distribution phenomena : Partition, absorption, adsorption, surface films, surface energy, membrane effects.
- (d) Dilute solutions: (i) Non-electrolytic solutions; (ii) Solutions of electrolytes. Colligative properties; non-colligative properties.
- (e) Disperse systems. Preparation and properties of suspensions, emulsions, smokes, foams, sols, gels, jellies. Coagulation, peptisation, ageing, cataphoresis, inhibition, etc.

VI. *Kinetic Theory. Thermodynamics.*

- (a) Equilibrium in homogeneous systems; equilibrium, dissociation, ionisation constants, activity coefficients, etc.
- (b) Equilibrium in heterogeneous systems; uni- and multi-component systems; phase rule.
- (c) Thermochemistry.

VII. *Electrochemistry.*

- (a) Electrical conductance.
- (b) Transport phenomena.
- (c) Electrode and diffusion potentials; e.m.f., concentration cells, etc.
- (d) Polarisation, overvoltage, passivity, etc.
- (e) Application of electrochemical methods.

VIII. *Reactions.*

- (a) Velocity studies in (i) Homogeneous systems; (ii) Heterogeneous systems.
- (b) Catalysed reactions: (i) and (ii) as above.
- (c) Electrode reactions.
- (d) Photochemical reactions.
- (e) Irradiated reactions.

IX. *New or Improved Methods of Preparing Substances (arranged according to periodic table) etc.*

X. *Analysis.*

XI. *Apparatus.*

XII. *Lecture Experiments and Historical.*

XIII. **Geochemistry.**

II. **Organic Chemistry.**

XIV. *Aliphatic.*

- (a) Hydrocarbons and their halogen, nitro-, and nitroso-derivatives.
- (b) Alcohols. Ethers. Alkyl salts. Sulphur compounds, including sulphonic acids.
- (c) Acids. Thio- and sulpho-acids.
- (d) Aldehydes. Aldoximes.
- (e) Ketones and diketones. Ketoximes.
- (f) Sugars, glucosides, and carbohydrates.
- (g) Amines. Amino-alcohols. Amino-acids. Cyano-acids, thiocyanic-acids. Amino-aldehydes and -ketones.
- (h) Amides (including cyanic, cyanuric, and thiocyanic acids).
- (i) Nitriles, carbylamines, metallic cyanides.
- (j) Amidoximes, imino-ethers.
- (k) Diazo-compounds.
- (l) Phosphorus, arsenic, antimony, boron, silicon, etc. compounds.
- (m) Aliphatic organo-metallic compounds.

XV. *Homocyclic.*

- (a) Hydrocarbons  $C_nH_{2n}$  to  $C_nH_{2n-6}$ , and their halogen, nitroso-, and nitro-derivatives. Sulphonic acids.
- (b) Hydrocarbons  $C_nH_{2n-8}$  to  $C_nH_{2n-4}$  and derivatives.
- (c) Amines. Includes anilides of aliphatic acids, carbamides, carbamates, and sulphonic acids. Diamines and polyamines.
- (d) Azoxy-compounds.
- (e) Azo- "
- (f) Hydrazo- "
- (g) Diazo- "
- (h) Diazoamino- "
- (i) Phenols and their substitution products; phenol ethers; aminophenols; thiophenols; sulphides; sulphonic acids.
- (j) Alcohols; amino-alcohols; di- and tri-arylcarbinols and their derivatives; sterols.
- (k) Carboxylic acids; includes nitriles of the respective acids, amides, and hydrazides; substitution products.
- (l) Aldehydes and their derivatives.
- (m) Ketones "
- (n) Quinones; benzoquinone, naphthaquinone, anthraquinone, and others; their substitution derivatives.
- (o) Terpenes.

XVI. *Miscellaneous unclassifiable substances.*

XVII. *Heterocyclic etc.*

- (a) Oxygen ring compounds.
- (b) Sulphur ring compounds.
- (c) Compounds containing both O and S rings.
- (d) Nitrogen ring compounds: one N.
- (e) " " " more than one N.
- (f) Rings containing O and N, S and N, etc.
- (g) Alkaloids.
- (h) Organo-metallic compounds.
- (i) Proteins.

XVIII. *Analysis.*

III. **Physiology and Biochemistry.**

XIX. (a) *Histology.*

- (b) Blood and lymph.
- (c) Vascular system.
- (d) Respiration and blood gases.
- (e) Muscle.
- (f) Nervous system.
- (g) Special senses.
- (h) Ductless glands, excluding gonads.
- (j) Reproduction, heredity, and experimental embryology.
- (k) Digestive system.
- (l) Liver and bile.
- (m) Kidney and urine.
- (n) Other organs and tissues; body-fluids. Tumours.
- (o) Nutrition and vitamins.
- (p) Metabolism, general and special.
- (q) Pharmacology and toxicology.
- (r) Industrial physiology and hygiene.
- (s) Radiations.
- (t) Physical and colloidal chemistry.
- (u) Enzymes.
- (v) Microbiological and immunological chemistry.
- (w) Plant physiology.
- (x) Plant constituents.
- (y) Apparatus and analytical methods.

B.—APPLIED CHEMISTRY.

- I. General; Plant; Machinery.
- II. Fuel; Gas; Tar; Mineral Oils.
- III. Organic Intermediates.
- IV. Dyestuffs.
- V. Fibres; Textiles; Cellulose; Paper.
- VI. Bleaching; Dyeing; Printing; Finishing.
- VII. Acids; Alkalis; Salts; Non-Metallic Elements.
- VIII. Glass; Ceramics.
- IX. Building Materials.
- X. Metals; Metallurgy, including Electrometallurgy.
- XI. Electrotechnics.
- XII. Fats; Oils; Waxes.

- XIII. Plastics; Resins; Paints; Coating Compositions.
- XIV. India-rubber; Gutta-Percha.
- XV. Leather; Glue.
- XVI. Agriculture.
- XVII. Sugars; Starches; Gums.
- XVIII. Fermentation Industries.
- XIX. Foods.
- XX. Medicinal Substances; Essential Oils.
- XXI. Photographic Materials and Processes.
- XXII. Explosives; Matches.
- XXIII. Sanitation; Water Purification.