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INORGANIC CHEMISTRY

Concepts and Main Group of Elements

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PL SONI | VANDNA SONI

The Chemistry of Coordination Complexes and Transition Metals

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PL Soni and Vandna Soni

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INORGANIC CHEMISTRY

Concepts and Main Group of Elements

About the Book

After the run-away success of the book on 'Coordination Chemistry' the authors have decided to venture on the next book. This book is an honest attempt to write about the next phase of Inorganic Chemistry to complete full circle in the knowledge of Inorganic Chemistry. At the first instance, this book has devoted a full chapter to carve out the contents and domain of Inorganic Chemistry. The book on Coordination chemistry deals with the knowledge of metals, their important compounds and their applications and importance in life. This book has been divided into three parts. Phase one of the book dwells on the basic concepts in inorganic chemistry which are so important to clearly understand the mechanism, structure and applications of inorganic compounds. Phase two of this book lays emphasis on the study of Hydrogen, alkali and alkaline earth metals. Phase three deals with the extensive study of the p-block elements (mostly non-metals). The study of p-block elements is inclusive of the study of their compounds, their properties of the compounds, their structures and applications in our life.

This section deals with the study of 80 percent of non-metals while the rest are metals. In brief, the study of p-block elements is broadly mentioned as the study of non-metals. In every group in the p-block elements the behavior of elements transcends from non-metals to metals. The last element at the bottom of the every group is mostly a metal except in halogens and zero group elements. The authors are known for their simple and lucid style of writing. They have easily put across their knowledge and ideas to the readers. Their communication is crisp and precise. We are sure the vast community of readers will become richer in knowledge and ideas by going through this book.

About the Authors

Dr. PL Soni completed his post-graduation in chemistry in the year 1965 from the Panjab University, Chandigarh under the guidance of Dr. RC Paul. He had a brief stint of two years as a teacher in S.D. College, Ambala Cantt. In the year 1968 he joined ARSD College, University of Delhi as a Lecturer. He was awarded doctorate degree in inorganic chemistry in the year 1980 under the guidance of Professor B.S. Garg, University of Delhi. He served ARSD College for 40 years and held many important, prestigious and responsible positions. He was selected as subject expert by NCERT in 1977-78, and was a member of CBSE syllabus forming committee. He has given lectures and talks on Doordarshan several times. After retirement in 2004 he remained as Director GTBIT, IP University. Besides, he remained subject expert on several selection committees for schools, degree and engineering colleges. He was also on the panel of SSC, Government of India. He served as Professor in PDM College of Engineering, Bahadurgarh and a consultant to Quality Chemicals, Delhi. After retirement he is still in love with the subject and serving vast students community by disseminating knowledge through his books and writings.

Dr. Vandna Soni, a Ph.D. from IIT Delhi, has been teaching at Maharaja Agrasen College, University of Delhi as Assistant Professor for over a decade. She has been constantly developing e-content and e-labs for undergraduate courses for DU Portal. She was deputed to institute of Life Long Learning, University of Delhi as Fellow in Chemistry in 2009-10 to develop chemistry e-content, e-labs and value addition content for B.Sc. (H) and B.Sc. Programme. She has contributed as author for CBSE-i curriculum and content design. She has been involved in interdisciplinary undergraduate research projects founded by University of Delhi under innovation scheme and star innovation scheme. Besides, she has been contributing towards development of e-content for Post-graduate courses in e-PG Pathshala project founded by MHRD.

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Electromagnetic Interference (EMI) Shielding Effectiveness (SE) of Polymer-Carbon Composites



Ranvijai Ram, Mostafizur Rahaman and Dipak Khastgir

Abstract In this chapter, the electromagnetic interference shielding effectiveness (EMISE) of carbon based polymer composites is discussed in details. The basic principle of EMI, EMI shielding, and its theory are mentioned herein. The basic requirement of EMI SE of a material is its electrical conductivity. It has been mentioned that electrical conductivity of 0.5 S/cm is required to produce at least 30 dB attenuation. As non-conducting materials exhibit negligible EMI SE, hence EMI SE of polymer-carbon composites based on only conducting carbons like carbon black, carbon fiber, carbon nanotubes, and graphene are reported within this chapter. EMI SE depends on many factors like nature of filler, filler concentration, nature of polymer, filler geometry, polymer blending, sample thickness, frequency of radiation, etc. These governing factors of EMI SE are discussed in details at the end of this chapter.

Keywords Polymer Composites · Carbons · Electrical conductivity
EMI SE · Dependent phenomena

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