DESCRIPTION

The last two decades have seen a renaissance in interest in the chemistry of the main group elements. In particular research on the metals of group 13 (aluminium, gallium, indium and thallium) has led to the synthesis and isolation of some very novel and unusual molecules, with implications for organometallic synthesis, new materials development, and with biological, medical and, environmental relevance.

_The Group 13 Metals Aluminium, Gallium, Indium and Thallium_ aims to cover new facts, developments and applications in the context of more general patterns of physical and chemical behaviour. Particular attention is paid to the main growth areas, including the chemistry of lower formal oxidation states, cluster chemistry, the investigation of solid oxides and hydroxides, advances in the formation of III-V and related compounds, the biological significance of Group 13 metal complexes, and the growing importance of the metals and their compounds in the mediation of organic reactions. Chapters cover:

- general features of the group 13 elements
- group 13 metals in the +3 oxidation state: simple inorganic compounds
- formal oxidation state +3: organometallic chemistry
- formal oxidation state +2: metal-metal bonded vs. mononuclear derivatives
- group 13 metals in the +1 oxidation state
- mixed or intermediate valence group 13 metal compounds
• aluminium and gallium clusters: metalloid clusters and their relation to the bulk phases, to naked clusters, and to nanoscaled materials

• simple and mixed metal oxides and hydroxides: solids with extended structures of different dimensionalities and porosities

• coordination and solution chemistry of the metals: biological, medical and, environmental relevance

• III-V and related semiconductor materials

• group 13 metal-mediated organic reactions

The Group 13 Metals Aluminium, Gallium, Indium and Thallium provides a detailed, wide-ranging, and up-to-date review of the chemistry of this important group of metals. It will find a place on the bookshelves of practitioners, researchers and students working in inorganic, organometallic, and materials chemistry.

ABOUT THE AUTHOR

Dr Simon Aldridge
Dr Aldridge’s research interests are in main group and transition metal organometallic chemistry, low coordinate metal systems, and Lewis acids in catalysis and sensors. He is the current chairman of the RSC Main Group Chemistry interest group, and winner of RSC Dalton Transactions European Lectureship for 2009-10.

Professor Anthony J. Downs
The scopy of Professor Downs’ research takes in the synthesis and chemistry of novel inorganic and organometallic compounds, mostly of the typical elements but also of transition metals. He has authored or edited more than 200 publications, including 27 books and review articles.

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