# List of Tables

<table>
<thead>
<tr>
<th>Table No.</th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Inorganic ion exchangers with their salient features.</td>
<td>7</td>
</tr>
<tr>
<td>1.2</td>
<td>Some ion exchange materials used as adsorbent.</td>
<td>48</td>
</tr>
<tr>
<td>1.3</td>
<td>Redox exchangers.</td>
<td>52</td>
</tr>
<tr>
<td>2.1</td>
<td>Synthesis and properties of zirconium (IV) iodooxalate.</td>
<td>94</td>
</tr>
<tr>
<td>2.2</td>
<td>Ion exchange capacity (meq/gram dry exchanger) of zirconium (IV) iodooxalate for various uni and bivalent metal ions.</td>
<td>95</td>
</tr>
<tr>
<td>2.3</td>
<td>Effect of heating temperature on the ion exchange capacity of zirconium (IV) iodooxalate.</td>
<td>99</td>
</tr>
<tr>
<td>2.4</td>
<td>Chemical stability of zirconium (IV) iodooxalate in different solvents.</td>
<td>100</td>
</tr>
<tr>
<td>2.5</td>
<td>$K_D$ value of some metal ions on zirconium (IV) iodooxalate in distilled water and nitric acid.</td>
<td>105</td>
</tr>
<tr>
<td>3.1</td>
<td>Synthesis and properties of zirconium (IV) iodovanadate.</td>
<td>116</td>
</tr>
<tr>
<td>3.2</td>
<td>Ion exchanger capacity iodovanadate for various uni and bivalent metal ions.</td>
<td>116</td>
</tr>
<tr>
<td>3.3</td>
<td>Effect of heating temperature on ion exchange capacity of various inorganic ion exchange.</td>
<td>119</td>
</tr>
</tbody>
</table>
3.4 Chemical stability of zirconium (IV) iodovandate in different solutions at 30°C.
3.5 Rate of oxidation of Fe (II) to Fe (III).
3.6 Oxidation of Fe (II) to Fe (III).
3.7 Oxidation of Sn (II) to Sn (IV).
3.8 Oxidation of Ascorbic acid to deascorbic acid.
3.9 Oxidation of thioglycolic acid to dithioglycolic acid.
4.1 Synthesis and properties of zirconium (IV) selenoiodate.
4.2 Ion exchange capacity of zirconium (IV) selenoidate (sample D) for various metal ions.
4.3 Effect of drying temperature on ion exchange capacity for various zirconium based inorganic ion exchangers.
4.4 Chemical stability of zirconium (IV) selenoiodate (sample D) in different solutions.
4.5 Distribution coefficient of some metal ions achieved on zirconium (IV) selenoiodate.
4.6 Separation of Pb\(^{2+}\) from other metal ions achieved on the zirconium (IV) selenoiodate column.
5.1 Effect of equilibrium time on the sorption of Hg (II), Pb (II) and Cd (II) on Duolite C-433.
5.2 Sorption of Hg (II) on Duolite C-433 (0.2 gram) at 20°C.
5.3 Sorption of Pb (II) on Duolite C-433 (0.2 gram) at 20°C.

5.4 Sorption of Cd (II) on Duolite C-433 (0.2 gram) at 20°C.

5.5 Sorption of Hg (II) on Duolite C-433 (0.2 gram) at 30°C.

5.6 Sorption of Pb (II) on Duolite C-433 (0.2 gram) at 30°C.

5.7 Sorption of Cd (II) on Duolite C-433 (0.2 gram) at 30°C.

5.8 Sorption of Hg (II) on Duolite C-433 (0.2 gram) at 40°C.

5.9 Sorption of Pb (II) on Duolite C-433 (0.2 gram) at 40°C.

5.10 Sorption of Cd (II) on Duolite C-433 (0.2 gram) at 40°C.

5.11 Sorption of Hg (II) on Duolite C-433 (0.2 gram) at 50°C.

5.12 Sorption of Pb (II) on Duolite C-433 at 50°C.

5.13 Sorption of Cd (II) on Duolite C-433 at 50°C.

5.14 Freundlich constant K and 1/n at 20, 30, 40 and 50°C.

5.15 Values of Cs and ln $\frac{Cs}{Ce}$ for Hg (II) on Duolite C-433 at 20°C.
5.16 Values of Cs and ln $\frac{Cs}{Ce}$ for Pb (II) on Duolite C-433 at 20 °C

5.17 Values of Cs and ln $\frac{Cs}{Ce}$ for Cd (II) on Duolite C-433 at 20 °C

5.18 Values of Cs and ln $\frac{Cs}{Ce}$ for Hg (II) on Duolite C-433 at 30 °C

5.19 Values of Cs and ln $\frac{Cs}{Ce}$ for Pb (II) on Duolite C-433 at 30 °C

5.20 Values of Cs and ln $\frac{Cs}{Ce}$ for Cd (II) on Duolite C-433 at 30 °C

5.21 Values of Cs and ln $\frac{Cs}{Ce}$ for Hg (II) on Duolite C-433 at 40 °C

5.22 Values of Cs and ln $\frac{Cs}{Ce}$ for Pb (II) on Duolite C-433 at 40 °C

5.23 Values of Cs and ln $\frac{Cs}{Ce}$ Cd(II) on Duolite C-433 at 40 °C

5.24 Values of Cs and ln $\frac{Cs}{Ce}$ for Hg (II) on Duolite C-433 at 50 °C