Number of heavy metals and metal compounds are used in the industries. Among the heavy metals many are toxic in nature even at low concentration. Some of the heavy metal ions in aqueous solution at low concentration are useful for living beings such as copper, manganese, nickel, zinc, iron, etc. for different purpose, but if these metal ions are present in high concentration then it becomes harmful to life. Chromium is one of the toxic metal in environment and exists in various oxidation states from Cr (–II) to Cr(VI) (Gzara and Dhahbi, 2001). Among these various oxidation states Cr (VI) and Cr(III) are most common and stable oxidation state of Cr and are also toxic in nature. Out of these Cr(III) is less toxic as compare to Cr(VI). Thus in many process of removal of Cr Cr(VI) convert into Cr(III) by different methods and then removal is achieved. Many chemical methods are recommended but reduction of Cr(VI) to Cr(III) can be achieved by using microbial methods which is less expensive and ecological method (Suranjana Ray, 2009).

Chromium is released in environment from various industries. It has been reported that Cr(VI) concentration in electroplating, chrome tanning industry and hardware industry is respectively in the range of 8.3- 3950 mg/lit, 20.7- 75.4mg/lit, 3.7mg/lit, and 60mg/lit (Esmaeili et. al., 2005; Song et. al., 2000, Onyancha et. al., 2008, Davis et. al., 1995; Kiptoo et. al., 2004; Tukaram Bai et. al., 2005, Gupta et. al., 1999, Xu et. al., 2005).

For the removal of chromium from aqueous solution various physical and chemical methods are used such as filtration, ion exchange, electrochemical treatment, precipitation, adsorption, chemical reduction, and membrane separation method (Nyer, 1992, Camargo et. al., 2003 and Rama Krishna et. al., 2005, Ahluwalia and Goyal, 2007, Sikaily et. al., 2007, Galan et. al., 2005; Basha et. al., 2008; Murthy, 2007; Ghiaci et. al., 2004; Kishore et. al., 2003; Pugazhenthi and Kumar, 2005; Chiha et. al, 2006).

Electrochemical precipitation method is method of removal of chromium from industrial effluent. In this method with the help of electrical potential reduction of heavy metals from
aqueous solution can be done like that of chemical method (Kurniawan et al., 2006). By electrochemical reduction or electrochemical precipitation method we can remove toxic heavy metals in a million ppm levels from aqueous solution to few ppm levels. By electrochemical precipitation method Kongsricharoern and Polprasert removed chromium from aqueous solution around 3860 mg/l to less than 0.2 mg/l (Kongsricharoern and Polprasert, 1995).

Ion exchange is another physicochemical method for removal of chromium for effluent. Now a day this is most preferred method for removal of chromium from effluent. In the ion exchange method the soluble metal ion displaces metal ion present on ion exchange material. The ions passed over ion exchange material get removed from solution. When effluent containing Cr ion is passed from one a bed of ion exchange resin then chromium ion get transferred over ion exchange material. When column is washed with acid solution ionic chromium get removed from the column. Generally, synthetic organic ion exchange resins are used as an ion exchange material. There are reports where Cr(VI) as well as Cr(III) is removed from industrial effluents using ion exchange resins. For the removal of hexavalent chromium from electroplating industrial effluent synthetic Dowex2-X_4 ion exchange resin was used (Sapari et al., 1996). Another resin such as Ambersep 132 was also used for removal of chromium from synthetic plating industries effluent with the help of more than one step (Lin and Kiang, 2003).

Biosorption is now well established process for removal of heavy metal ions from industrial effluent. For the adsorption of heavy metals from effluent various low cost materials can be used such as agriculture waste (Basso et al., 2002; Park et al., 2006). In the biosorption method various processes involved such as adsorption-complexation on pores and surface, complexation, chemisorptions, micro precipitation, surface adsorption and heavy metal hydroxide condensation etc (Gardea-Torresdey et al., 2004). After reduction of Cr(VI) to Cr(III) and this trivalent chromium can be removed by bio-sorption process from treated aqueous solution. The bio-sorption process occurs generally in neutral to alkaline medium. In alkaline medium increases the attraction between adsorbent material and Cr(III) (Richard and Bourg, 1991).

Varieties of adsorbent material are used, out of these activated charcoal is most effective and hence most preferred adsorbent for removed of chromium from aqueous solution (Micaela, 1996; Asha gupta, 2006). Activated charcoal prepared from various raw material are used such
as nut shell, sawdust, coconut shell etc. (Mohan and Pittman 2006). Hamadi et. al., used granular activated charcoal for the removal of chromium from industrial effluent (Hamadi et. al., 2001). He found that, surface area of metal adsorption increases with reduction of particle size of adsorbents and this result into greater removal of amount of chromium from aqueous solution. As increases a temperature greater is the adsorption rate (Hamadi et. al., 2001). Mohanty et al. reported removal of Cr(III) at alkaline pH and observed highest adsorption of Cr(III) at pH 10 (Mohanty et al., 2005). For the adsorption of Cr(VI) Natale et. al., used activated carbon prepare from a bituminous coal (Natale et. al., 2007). Natale et al. observed that, the removal of chromium from industrial effluent is strongly depending on pH of solution.

Adsorption method is very effectively as compared to chemical method (Debabrata et. al., 2011). With the help of different adsorption material such as coconut shell carbon, wood charcoal, and activated charcoal removal of heavy metals was achieved from electroplating waste water (Debabrata et. al., 2011). With the help of activated alumina column removal of heavy metals such as copper, chromium from chrome and bronze plating waste water is possible (Debabrata et. al., 2011). As compare to another adsorbent saw dust adsorbent showed higher capacity for removal of chromium from electroplating industry. The adsorption was carried out at pH-2 (Samanta et. al., 2000). Chromium from industrial effluent can be removed at pH -5 with the help of chitosan based adsorbent (Schmuhi et. al., 2001).

For the removal of chromium from aqueous solution semipermeable membrane can be used by maintaining hydraulic pressure. Different types of semipermeable membrane are used such as liquid, inorganic, polymeric membranes. Non-interpenetrating ultra filtration carbon membranes can be adapted for removal of chromium (Pugazhenthi et. al., 2005). Removal of chromium can be achieved using different nano-filtration material having polyamide membranes with different concentration and different pH of aqueous solution having chromium (Muthukrishan and Giha, 2008). In some cases two membranes were used, one is high rejection membrane and other is low rejection membrane. The disadvantages of the membrane separation method are it required costly and harmful reactants (Komori et. al., 1990). In this method removal of chromium from aqueous solution is low as compare to other removal methods of chromium (Kurniawan et. al., 2006). Nanofiltration membrane such as asymmetric poly (m-
phenylene isophthalamide) can be used for removal of chromium from aqueous solution (Xiaojing Ren et. al., 2010). In this method characterization of hexavalent chromium was done by scanning electron microscopy and atomic force microscopy. It was reported that the nanofiltration is the effective and suitable for removed of chromate from industrial waste water (Neelakandan et. al., 2003; Hafiarle et. al., 2000). Ultra-filtration, nano- filtration membrane process is costly and gives some by products during a reaction.

Reduction of chromium using bacteria was achieved by various scientists (Fujie et. al., 1996; Guha et. al., 2001; Zhihui Yang et al., 2009). Cr(VI) can be reduced by micro-organism because it can be react on the surface of bacteria (Fein et. al., 2001). Intra-cellular precipitation is also efficient method for reduction of chromium (Cervantes et. al., 2001). Microbiological reduction of chromium from aqueous solution is kinetically important for ecosystem (Fendorf et. al., 2001). Because of toxicity of heavy metals, they can reduce the activity of micro-organism (Oubbard et. al., 2001). Shewanella alga BrY – MT and few strains such as Ps.aeruginosa , B. Cereus, , Ps. Ambigua, Ps. Flurescens, E. coil, Achromobacter Eurydice, B.subtilis, Micrococcus roseus are strains used for reduction of hexavalent chromium (Guha et. al., 2001; Camargo et. al., 2003; Lovley, 1994). Carcinogenic, immunotoxic and genotoxic chromium can reduced from Hexavalent chromium to trivalent chromium using microbial action from soil and water body. This method is chiefly and eco- friendly (Suranjana Ray, 2009) but can not be adopted when Cr(VI) concentration become very high.

Thiobacillus ferrooxidans was used for reduction of hexavalent chromium (Donati, 2001). In this process Thiobacillus ferrooxidans environment with sulphur is used as a control source, as generation of sulphur compounds related to reduction of Cr(VI). On the another hand T. ferrooxidans is reduced hexavalent chromium in high quantity at low pH.

Candida maltose chromate resistant strain is used for reduction of hexavalent chromium from the leather industry (J. Felix Gutierrez- Corona, 2003). For the reduction of Cr(VI) to Cr(III) used mixed strain Pseudomonas (Rao, 2007). The different bacterial species can irritate activity of biological membranes which reproduce the chemical similarity (Cervantes and Campos- Garcia, 2007). During the reduction of chromium using bacteria or enzymes Cr(VI)
converted to Cr(III), this Cr(III) is also toxic to environment (Cervantes et. al., 2001). Bacteria which can be resistant to chromate can be fixed either by plasmids or by chromosomal genes (Crevantes and Campos- Garcia, 2007). For the production of H₂S sulphur reducing bacteria are moved during the reaction and this product act as a reactant. In nonspecific method for reduction of Cr(VI) transport of ions for anion such as SO₄²⁻ and PO₄³⁻ (Cervantes et. al., 2001). As compare to red or brown algae green algae is preserve chromium in aqueous solution (Cervantes et. al., 1994).

Photo remediation is process in which with the help of light and catalyst reduction of Cr(VI) to Cr(III) can be done from aqueous solution. This method is found useful at bench scale as well as in pilot scale (USEPA, 1997). Photo catalytic reduction of Cr(VI) done in presence of organic compounds using zinc oxide nano particles as photo-catalyst (Samarghandi et. al., 2013).

Removal of chromium from synthetic waste water and chrome plating waste water containing 30 mg/lit of Cr⁺⁶ by scrap iron filing. In this process we maintain pH was 3, particle size of iron filling was 35-200 mesh, 250 rpm agitating rate, time required for completed a reduction is 180 min, and amount of sample was 1 g this method is only used for reduction of chromium, it does not affect for reduction of copper or nickel (Suwannee Junyapoon, 2006). With the help of aluminium oxide, adsorbed 78.1 mg/g of chromium by batch scale experiment from 10 to 200 mg/ lit chromium solution occurs in electroplating industries (E. Alvarez- Ayuso et. al., 2007). For the reduction of Cr(VI) to Cr(III) from electroplating industries, fluidized zero-valent iron method used. This method is useful because it required low pH (1 to 2), and produces a ferric ion (Shiao- Shing Chen et. al., 2007). Hexavalent chromium can be reduced using a Fe₃O₄ – stabilized FeO nano particles. In this process pH of solution plays important role. At acidic or neutral medium the complete reduction of chromium from aqueous solution take place (Zhang et. al., 2009). From chromium plating aqueous solution and synthetic waste water removal of chromium can be done using a scrap iron filings. Synthetic waste water having a concentration 30mg/ lit of Cr(VI). The study shows that at highly acidic pH (pH 3) the removal of hexavalent chromium can occurs. With the help of iron filing the reduction of hexavalent chromium converted to trivalent chromium in first step. In second step trivalent chromium and iron can be removed from aqueous solution by precipitation method at slightly acidic to alkaline medium. For precipitation of Cr(III) and Fe(III) sodium hydroxide or calcium hydroxide were used. Out of this two, sodium hydroxide gives good result. Other heavy metals such as nickel
and copper does not affected the reduction of chromium from aqueous solution. The reaction follows first order rate reaction (Suwannee, 2006). For the removal of hexavalent chromium from aqueous solution by low cost fertilizer material was also reported. In this method the reduction of chromium occurs at acidic pH (pH 2), time required is 70 min and at 303 k temperature. Kinetically it is found that this reaction follows pseudo second order rate reaction (Gupta, 2010). Cr(VI) concentration in surface water is 0.05 mg/lit, and total chromium is below 2 mg /lit. Pilot scale study carried out for reduction of chromium from higher state to lower state from contaminated groundwater using ferrous sulphate as coagulant and then coagulate was removed filtration method. By using this method the chromium concentration decreases up to 100 µg/lit to less than 5 µg/lit under optimized condition (Qin et. al., 2005). In catalysis reaction method hydrogen peroxide or titanium dioxide is used for reduction of chromium from aqueous solution. In this process reaction carried out at three different pH i.e. 6, 7, and 11. pH 11 gives better result as compared to other pH (Farzad arjomandirad et. al., 2012). The heavy metals dissolved in waste water bodies, the percentages of these heavy metal increases and finally these heavy metals go to the food chain (Akpor, 2010). Chemical precipitation is one of the methods for removal of chromium from both industrial effluents (Ramakrishnaiah, 2012). The removal of maximum amount of heavy metal ions [Cr(III), Cu(II), Ni(II), Cd(II), Zn(II)] at pH 8-9 by using Fe(III) hydroxide as adsorbent was reported by Mohammad Ajmal et. al., where as SO\(_4^{2-}\) can be removed at pH 4 (Mohammad Ajmal et. al., 1992).

Ferrous iron is used for reduction of chromium from higher state to lower state from aqueous solution (Scott, 1996). The stoichiometrycally and kinetically reduction of hexavalent chromium from aqueous solution by hydrogen sulfide is feasible (Kim et. al., 2001). Hexavalent chromium can be reduced by sodium sulphide in stabilization processes in pilot scale. In this process cement, lime and gypsum is used as the stabilizing agents (Velasco et. al., 2012). With the help reducing agent such as sodium metabisulphite and ferrous sulphate the reduction of hexavalent chromium to trivalent chromium can be takes place, and completely reduction of chromium done with the help of precipitating reagent by using base (Karale et. al., 2007). The reduction of hexavalent chromium from aqueous solution can be done by using sodium sulphite and sodium metabisulphite at pH-2 (Beukes et. al., 1999). With the help of iron nano particles completely removal of chromium from aqueous solution occurs at alkaline pH (Shao- feng Niu et. al., 2000). Using a fixed film systems reduction of chromate by sulphate reduction bacteria in
which hydrogen is an electron source from aqueous solution (Battaglia et al., 2002). Electro
dialysis and chemical precipitation method used for treatment to electroplating wastewater (Peng
et al., 2004). By using these method removal of highly concentrated heavy metals from
electroplating wastewater such as Cu$^{2+}$, Ni$^{2+}$, Cr$^{6+}$, Zn$^{2+}$ was done (Peng et al., 2004). Hydrogen
sulfide goethite surface catalytic used for reduction of Cr(VI) (Kim et al., 2007). The reduction
of Cr(VI) occurs at alkaline pH (7.67 - 9.0) by sulfide in presence of illite and kaolin from
aqueous solution (Yeqing et al., 2004). Simultaneous removed of chromium and copper done by
precipitation method is possible. The pH of aqueous solution can be adjusted with the help of
sodium carbonate and study of removal of chromium and copper carried out. The pH 5.2 shows
initial co-removal of Cr(VI) with Cu(II) and completed removed at pH 6.2 (Sun et al., 2003).

For the removal and recovery of heavy metals from industrial effluent ion exchange
resins are used for the removal of trivalent chromium from industrial effluent and mostly
chelating exchange resin and weak cationic resins are used (Sofia et al., 2007). With the help of
Epoxy cross linked poly (ethylamine) which is act as gel coal on silica used for removal of
Cr(III) from aqueous solution (Chanda, 1997). Separation of mixture of natural water containing
Cr(III)/Cr(VI) and As(III) and As(V) using capillary micro extraction method, in which
aluminium oxide used for coating purpose. The speciation and characterization carried out by
ICP-MS. In this process the recovery of both arsenic and chromium is around 94-100% (Hu et.
al., 2008). Separation of Cr(III) and Cr(VI) carried out using ion chromatography. Further the
mass spectrophotometer used to study of reduction of chromium from industrial effluent
(Hagendorfer, 2008). Strong base anion exchange resin such as pyridine is prepared and used for
removal of chromium from industrial effluent (Neagu, 2009). Ion exchange resin used as
adsorbent for removal of Cr(VI) such as, 1200H, 1500H and IRN 97H. Kinetically this reaction
shows 1st order rate reaction (Rengaray et al., 2003).

The removal of Cr(III) from aqueous solution done by using electro coagulation process.
In this method study carried out for both monopolar and bipolar configurations with the help of
multiple electrodes. In these experiment precipitation, co-precipitation, cathodic reduction and
adsorption methods can be carried out at alkaline pH, in existence of chloride ions (Golder et al.,
2007). With the help of electro coagulation reactor the removal of Cr(VI) can be done at
different pH and chloride concentration (Arroyo et al., 2009). Removal of hexavalent chromium
from aqueous solution was done with the help of iron and aluminium electrodes by electro
coagulation process (Mouedhen et. al., 2009). By electro coagulation process completely reduction of heavy metals from industrial and synthetic wastewater can be done. With the help of electro coagulation method removal of COD from the waste water (Dermentzis, 2011).

The waste product of alcohol production from sugar beet molasses is vinasse, which is used for reduction of hexavalent chromium from aqueous solution (Altundogan et. al., 2004). Roots of Typha latifolia and ash of this plant root, which are low cost material act as sorbent for removal of hexavalent chromium from waste water (Barrera et. al., 2004).

For the removal of Cr(III) and Cr(VI) from industrial waste water various researchers were used raw and modified lignicellulosic material, which having low cost or costless and act as adsorbent (Miretzky, 2010). Hevea Brasiliensis sawdust activated carbon is used as adsorption of hexavalent chromium from aqueous solution (Karthikeyan et. al., 2005). The raw and modified activated carbon is used for adsorption of Cr(VI) from aqueous solution. With the help of activated carbon and acid-modified carbon Tang and Khezami achieved 97.67% and 99.87% removal of Cr(VI), which show kinetically pseudo second-order rate reaction (Tang, 2009; Khezami, 2005). The low cost adsorbents and activated carbon used for remediation of Cr(III) and Cr(VI) from industrial waste water. Mohan reported reduction of Cr(VI) to Cr(III) at pH 2 and then removal of Cr(III) at pH 9.0-10 (Mohan, 2006). Using biopolymer chitosan coated with poly 3-methyl thiophene polymer reduction of hexavalent chromium from industrial effluent can be done at pH 2 and at endothermic condition (Hena, 2010). By using indigenous biomaterials absorption of trivalent chromium from industrial effluent was carried out. This process having two steps, in the first step reduction of Cr(VI) to Cr(III) using the raw biomaterials. In the second step the biosorption of Cr(III) by preparing biomaterial activated carbon (Singanan et. al., 2008). For the adsorption of Cr(VI) from aqueous solution Nameni et. al., used wheat bran. By using this method they reported 88.80% of removal of chromium at pH 2 from water aqueous solution (Nameni et. al., 2008). For the removal of different heavy metals from aqueous solution different biomaterials such as Eucalyptus bark (Sarm and Paut, 2006), coconut shell, waste tea, tree leaves, rice straw (Karthikeyan et. al., 2005), maize bran (Singh et. al., 2006). The reduction of lead (Bulut and Baysal, 2006), copper and cadmium (Farajzadeh and Bovier, 2004) etc. can be used. The activated carbon was prepared for removal of Cr(VI) from a renewable agricultural residue of pruning mulberry shoot (Wang et. al., 2010). The removal of hexavalent chromium is
done using the micro-alloyed aluminium composite (Bojic et. al., 2004). For the removal of Cr(III), some of the researchers used silica gel as sorbent material (Zhang et. al., 2008).

The hexavalent chromium can be adsorbed using the hyacinth Enchhornia crassipes (Sujana, 2007). At low pH the reduction of hexavalent chromium in the presence of excess soil fulvic acid take places (Paul, 1995). For the removal of hexavalent chromium from aqueous solution used water lilies (Choo et. al., 2005). Tanning gel prepare from a natural polymer with many polyhydroxy phenyl groups used for adsorption of Cr(VI) from industrial effluents (Yoshio et. al., 2000).

Hexavalent chromium is major contaminant of environment, which can be reduced and removed by bacterial isolation using bacteria such as pseudomonas fluoresces and bacillus species (Parameswari et. al., 2009). Bioadsorption of heavy metals from aqueous solutions by waste activated sludge is done (Atkinson et. al., 1998). At pH 1.5 and 121 rpm the removal of hexavalent chromium from aqueous solution using Ocimum americanum L. seed pods (Levankumar et. al., 2009) was reported. The reduction 100% of Cr(VI) from industrial waste water by Nymphaea spontanea was reported. The decreases the concentration of chlorophyll, proteins and sugar contents in plants after reduction of Cr(VI) from water body (Choo et. al., 2006). Crushed coconut, almond shell, ground nut shells are the low cost material used for removal of Chromium from waste water sample was reported by Agarwal. This reaction follows kinetically first order reaction (Agarwal, 2006). The maximum reduction of Cr(VI) from industrial effluent by using immobilized Aspergillus niger was reported (Chhikara, 2008). The reduction of Cr(VI) to Cr(III) and formation of chromium hydroxide can be done using galvanic waste water sludge (Bojanowska, 2002).

By using some strong acids such as hydrochloric acid, perchloric acid, sulphuric acid, nitric acid the reduction of hexavalent chromium from at very low concentration is possible. In this method concentrated acids are used as reducing agents and analysis carried out using ion exchange chromatography (Strgio et. al., 2004).

By using sulphate-reducing bacterial biofilms reduction and precipitation of chromate was done at alkaline pH (Smith, 2000). Emine et. al., reported removal of Cr(VI) on pomace (an olive oil industrial waste) by adsorption. They observed that as increases the concentration of
chromium and flow rate of column the decreasing the absorption of chromium and reduction of chromium from aqueous solution by batch and column study of removal of chromium from industrial effluent (Emine et. al., 2006).

At pH 2 the removal of chromium from aqueous solution in 2 hours can be done using activated charcoal at concentration of chromium 0.05 mg/ml. If increase in initial concentration of chromium in effluent from 0.05 to 0.5 mg/ml the is done then removal of chromium decreased (Seyf-laye et. al., 2010). The removal of hexavalent chromium from aqueous solution by hydrogen peroxide in acidic medium is strongly depends on pH of the solution. The increased the pH of solution results in decreasing the rate of reduction of Cr(VI) from industrial effluent (Niekerk et. al., 2007). For the removal of Cr(VI) from aqueous solution the pH 2-3 and temperature 45°C was optimal for reaction using immobilized cyanobacteria as an adsorbent (Kiran et. al., 2007). Khan et. al., used rice husk for removal of Cr(VI) from wastewater and reported that adsorption obeys Freundlich adsorption isotherm (Khan et. al., 2003). Maximum removal of chromium from aqueous solution can be done at pH 4.5- 6.5 at initial concentration of chromium was 5 mg/lit by using sawdust (Baral et. al., 2006). Costless, granular ferric hydroxide was used as adsorbent for removal of chromium from industrial effluent (Asgari et. al., 2008).

The reduction of Cr(VI) by humic substances form leonardite and peat was investigated at pH 5.4 by Denis et. al., 2004. Fe(II) accelerate the reduction of Cr(VI) by peat humic substances. For remediation of Cr(VI) the coal humic substances was more suitable (Denis et. al., 2004).

Hesham et. al., reported removal of Cr(VI) from tannery effluent using lime and cement dust. In this method in first step they have reduced Cr(VI) to Cr(III) by using micro-organism belong to the actinomicete and then Cr(III) was removed by precipitation using lime and cement dust (Hesham et. al., 2010). By this method nearly 100% removal of Cr(VI) was attempted by these researchers.

For the reduction of Cr(VI) by carbon nano tube, the study carried out at different pH, temperature, dosage using multiwall carbon nanotubes as reducing agent. The reduction of chromium increases with decreasing pH, and increases the temperature and dosage of carbon
The unconventional material such as peach Kemel and nutshell was used as adsorbent in removal of Cr(VI) from aqueous solution (Cristina et. al., 2007). Acidic pH is favourable for reduction of Cr(VI) while, basic pH was favour for completely removal for both state of chromium. Arthrobacter Viscous biomass used for removal of chromium from waste water and it was found that it highly depends on pH of effluent (Silva et. al., 2009). Removal of 300 mg/lit Cr(VI) from industrial effluent can be done by using *Spirulina fusiformis* cyanobacteria (Pandi et. al., 2006). Removal of chromium from aqueous solution can be done by adsorption of metal ions on arthrobacter biomass surface in acidic pH (Silva et. al., 2009). Various physiological and biochemical process used for removal of heavy metals from aqueous solution by microalgae (Arunakumara et. al., 2008). Removal of chromium and nickel from aqueous solution can be carried out by blue green algae (Parmeswari et. al., 2009). Heavy metals can be removed from electroplating effluent by cyanobacterium Nostoc (Dnyneshwar et. al., 2009). At acidic condition the removal of chromium from aqueous solution can be done by prawn pond algae (Srinivasa et. al., 2007).

Review of literature showed that variety and number of method are reported for removal of Cr(III) and Cr(VI) from aqueous solution. Many of these methods are carried out at bench scale where we can adjust or monitor different reaction conditions accurately. When these methods are to be applied at large scale then many problem arises during scaling up of reaction and this is a drawback of bench scale models proposed for removal of Cr(VI) and Cr(III) from industrial effluents. Thus, in present study we are going to propose alternative cost effective methods for removal of Cr(VI) and Cr(III) from aqueous solution or industrial effluents which will not worked out at bench scale but also worked out at large scale.