

Chapter- 8

Scope for future work

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It is seen in the previous chapters that aluminium dross is a waste industrial by-product of the aluminium smelters. With a good amount of metallic aluminium, the dross is employed for the production of tamarugite, potash alum, hydrogen and alumina, as illustrated in the present work. However, there are many other valuable products that can be synthesized using dross as a raw material.

Leaching the dross fines with sulphuric acid leads to the formation of aluminium sulphate in the leach liquor. Using this leach liquor to produce solid aluminium sulphate is also a good method. Another alternative could be to employ organic solvent precipitation to achieve the solid aluminium sulphate.

Use of other acidic leaching reagents like acetic acid can also be done. For instance, acetic acid leaching can bring in the aluminium ions and acetic acid ions into the leach liquor. Derivative products of these acids can be synthesized by crystallization or precipitation. Similarly other alkalis can also be employed for the leaching of aluminium dross to extract the metallic values in the liquor.

The application of tamarugite has been described in the field of coagulation in the previous chapters. The other applications and properties of this product can be explored. The production of alumina from the residual solid is described in the previous chapter. Utilization of this alumina for the preparation of composites can be done. The hydrogen evolved in the processing of aluminium dross can be tried to be stored simultaneously. Hydrometallurgical experiments can be extended to black aluminium dross as well. Scaling up of the processes to enhance the yield can also be done.