INTRODUCTION

The work on such theme of craft technology and the condition of artisan class during 18th century northern India, have never been easy, as it required a critical analysis of enormous amount of source materials needed for the purpose.

The craft and its related technology could not keep pace with the passage of the time and so it becomes difficult for any scholar to keep track and get all information related to technology and craft. It is also difficult to keep the track of incorporation of those 'ideas and techniques', which have been changing with the passage of time. The work also become very difficult when a comparative study is done between the indigenous technology and the technology coming from abroad and judging which technology came from outside. The analysis is required in order to differentiate between the purely indigenous and purely foreign technology and techniques. The study taken in this regard focuses upon Indian scenario but it has not left all together the technological changes happening out side the periphery of the Indian subcontinent. The neighboring 18th century states like China, Central Asia, Persia and the Middle East, have been taking into account. The efforts have been made to reestablish the linkages and the sources from where such technology came. Chinese were proficient enough in certain crafts such as textiles, silk manufacturing and in other technologies whereas in other societies particular in Persia and in the Middle East the technology was transferred with the coming of number of people from Central Asia and Middle East to India in due course of time. So in that regard the transfer of foreign technology to India forms important segment. Detailed studies of technology transfer (more importantly from coming of Muslims into Indian subcontinent during 13th century up to
18th century) make it vast and detailed study. The transfer of ideas and techniques and its incorporations find prominent study. The study of European context is also very interesting as Europe was trying to break from the past agriculture setup to industrial setup, with the enormous ideas and institutions at its disposal. It had already experienced a period of Renaissance which brought out Europe from the Dark Ages. Religious orthodoxy gave way to the age of Enlightenment, Scientific Thought and the period of scientific development. In that regard also Europe had greatly adopted those technologies, which had to transform its moribund society into modern industrial one. The study of pre-Industrial Europe and more precisely Pre-English condition, in having a comparative study between the European technology and the Indian one. The factory system as we know existed in the pre-British societies which later on served as the base for industrial society.

Parallel to European factory system there existed in India in the form of Karkhana system. We find both the systems, in nature and practice greatly similar. Our studies also focus upon the aspects on transformation in the Indian context, with the downfall of the Mughal Empire. The Karkhanas system greatly suffered and it lost the patronage system though this situation was greatly saved with the emergence of local kingdoms in the 18th century India. But in the European context, we don’t find change as far as the political scenario was concerned. The political setup of pre-Industrial England was not affected as it happened in India. We find the same factory system in English condition paved the way for the great Industrial Revolution. A modern industrial set up replacing hand-operated machine with that of mechanically powered and steam operated machine in 18th century England. So the effort is made to incorporate all points of view from across the continent and bring all those informations which were very important for understanding 18th
century Indian set up. In this work, we focus upon the existing industry in 18th century India, more significantly textiles, metal, chemical, allied industries apart from agro-based industries, keeping in mind changes in technology, along with this study of artisan class also after going through the original sources vis-à-vis the secondary and published work.

The appropriate research methodology has been applied for working on difficult theme as of technology and the artisans of 18th century India which required in-depth analysis of the sources and the gathering of information bit by bit, piece by piece, and interpreting in one's own language and style. The varieties of materials available of working on such theme make it more difficult, therefore working on the theme does require analyzing material from different sources. The theme was never going to be easy when one takes up the task of understanding the technology of 18th century which is more in continuation of previous system. We are to understand the sources starting from 13th Century down to the Mughal period, as we find more or less the same kind of technology with minor modifications continuing down to 18th century.

In this regards it is extremely important to know as what kind of sources have been consulted, analyzed and interpreted for preparing the work. The foremost it was done to have firsthand account from the available memoirs, manuscripts, documents from Delhi Sultanate period as well as from the Mughal period. In this regard we find Tarikh-i-Firuzshahi of Ziauddin Barni, Tarikh-i-Farihsta and other related works very important for Delhi Sultanate period whereas the great works, like Ain-i-Akbari, Akbarnama, Tuzuk-i-Baburi, Tuzuk-i-Jahangiri, Tarikh-i-Humaynu wa Akbar, Dasturul Amal, Makhzane Afgana and other Persian and Arabic manuscripts. We also have Firmans, Nishans, and other sources like paintings, etc. also useful in order to understand the changing technology which belong to the Delhi Sultanate period and
Mughal period. Apart from that we find that European sources some of which comprise of travelogues, the factory records or the eyewitness accounts of those Europeans, who visited India during 18th century or before that. The travelers like Barbosa, Bernier, Fitch, Manrique and Manucci, etc. and number of others who served the purpose of providing their own accounts and of the Indian system and corroborated the writings with Indian accounts. The records and the report from different sources also served the purpose for framing this work and bringing it to this shape.

The whole work have been divided into major five chapters along with that a major portion on its related information, contained in appendices, a thorough chapterization has been done for better understanding the theme. In chapter First the studies have been done on the aspects of Karkhana system as it existed during the entire Delhi sultanate period, more particularly under the Tughlaqs, Syeds and Lodhis and the passing over to the great Mughals, who were more organized in that regards with the expansion of the Mughal empire it needed household goods, services, or luxury items on day to day basis, all those were supplied through Karkhana system as there was no other alternative left to them from where they could procure such items for state and for maintenance of royal households. Detailed studies have been done in regard to official responsible for maintaining those Karkhanas, their assigned duties and their status and their perks and privileges. We have also studied the responsibilities of official like Mir-i-Saman and Khan-i-Saman, tahvildar, Darogha, Musstaufee and Nazir as they were very important. We have provided all those details of manufactures from the Karkhanas which were produced on the requirement by the state. In this chapter we have also included the detailed study of Karkhana system existing away from royal control and
more importantly in newly independence state like Hyderabad, Oudh, Mysore and the Maratha Kingdom and in other places. The item for produce in Karkhanas was also taken into consideration, thus this chapter pertains to understanding this system in totality and the aspects of its utility.

In the second chapter we have tried to understand the vital industry of 18th century namely the textiles industry. As we are aware the textile was one of the most sought after the industry, as per its demand and as per its utility, for the general masses and the elite class as well as the royalty. The study becomes very important as India has got long tradition of handloom textiles industry and the technology of more or less about five two thousands years of time. But in this study we take serious note of of its history from the first Muslim empire dawn to the coming of British in India. By the time of 18th century textile industry was already in advance stage as per its productivity and use was concerned. It did produce the required quantity of the textile but those were not in abundance as due to some constraints in the production. It was greatly limited to satisfying the needs of only to the better of section of the society. The textiles industry thus not meant for more production as it lacked technology during 18th century the limitation that effect was also due to the fact that Indian lacked technological innovation and hardly any new aspect in technology existed in textiles industry. In this study we have tried to incorporate those aspects which are important for understanding these intricacies of textile industries as it existed in 18th century and how many technological innovations took place during the five hundred years of time. We have also tried to understand the comparative marketisation of the Indian products and its demands from overseas and we gather that till 18th century Indian products dominated far and wide and were in great demand in Europe also so much so that in
one remarks the poet Daniel Defoe says that "from bed-spread from handkerchief and from curtain to tablecloth, homes are full of Indian textiles." This remark suggested the fact that until the coming of British in respect to handloom industry India was major industrial power which had international recognition. We have also studied about production centre, trade route and the supply route for the raw material. The aspects of British entry to India and later on their interest to capture textiles market are very important. In the same context industrial revolution and aspect of machine made textile goods and with competition from handloom goods another important studies in this chapter. We have also incorporated the manufacturing technique of textile, the colouring and varieties of textiles products and its specification region-wise. Thus this chapter is very important for knowing the 18th century industry in India.

Another chapter which is of the vital interest is chapter on metallurgy and auxiliary and ancillary branches. Indian indigenous industry in this regard becomes important as it could not develop on the pattern of European innovation with mining and use of metal coming to the European context, so in comparison to Europe Indian lacked the metallic technology as it was in Europe, metallurgy as a important industry could not emerge as vital as other industries with the certain disadvantage in the Indian scenario as India did not progress in specific technology due to the reason being that the Mughal hardly gave thought to such new ideas.

Another aspects of improving industries in modern times the Indian society generally remain stagnant, static and having little space for scientific development apart from very crude form of industries in which available metals converted into objects of utility by the local smith whose efforts have been made for getting a level of mass production. Still it was regarded as mysterious kind of technology
forming the branch of alchemy during medieval age with no scientific revolution, with no innovation almost negligible in regard as it was happening in European context. Metallurgy suffered in the Indian context but no denying the fact that there existed such industries as per the need of royalty, of elite class, for those sections of society which needed whenever they required. In the crude form we find the existence of mining techniques in which metals were taken off mine and coal and such other item we find from different locations. The use of Iron, copper, salt and alloy metal are reported by various sources, where as we find chemical industries having important place among such industries in which gunpowder, soap, lime, soda, glass and paper form important items of production but again it was very limited to the production at the label of use for the royalty in the elite class. In this aspect we also find certain references of techniques of salt and salt mining. From this point of view understanding 18th century industries we find the chapter is of greater importance.

The chapter four is related to the agro-based technology and products. India being the predominantly agriculture country the agrarian industries in the form of cotton industry did exist right from the beginning of civilization. Right from this point of the view agriculture technique which formed the part of technique used by farmers in ploughing the field down to its harvesting, its irrigation and its use in sugar making technique, oil processing technique similar technology required in agriculture. We also find in the chapter the allied technique of agro-based society for example, carpentry, smithery, the tannery and the processing of food, as it is so important aspect in this regard. In this chapter also we find the aspects of understanding the relation between peasantry the artisan class and those two great segments of Indian societies worked how this maintained the relation, what was mode of
exchange of services and worked them apart from the barter system. So this chapter is significant in understanding handicrafts technique 18th century in India.

The last and fifth chapter deals with the position and the condition of artisan class during 18th century in northern India. In this chapter we come to know what formed the basis of position of artisan class. Artisans are vital segment to any society but it is very difficult to determine their exact and particular position in society. In this regard we have tried our best to understand the socio economic condition of the artisan class, society, their wages, the guild system, their fluctuating fortune and their relation with their patrons as 18th century India remain volatile with the passing of the Mughal Empire. It was important to know how much artisans were affected and similarly how much change status in the society we have included at those aspects in this chapter and tried to unravel the truth behind the condition of artisan class when the British were knocking at door in search of market with new technology they attacked the existing indigenous industrial set up which hit hard the artisan class. We get to know during 19th century that artisans were greatly affected, those villages were uprooted and industries were targeted by British official. It becomes almost significant to know the condition of artisan class in order to understand the technique and crafts of the 18th century Northern India.