iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** XI **Month of publication:** November 2022

DOI: https://doi.org/10.22214/ijraset.2022.47707

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue XI Nov 2022- Available at www.ijraset.com

Carrying Traditions of Vibrant IKAT Ahead – Innovative Approaches through Academia

Rajesh Sharma[1], Richa Arora[2], Pradeep John Kerketta[3]
[1, 2, 3]*Fashion Design Department, Footwear Design & Development Institute, Fursatganj, India*

Abstract: ***Ikat has been carrying a long history through its vibrant blurred texture, colours, yarns and abstraction in design. Ikat of Odisha has carved its own worldwide identity in traditional textiles and cultures of India. Ikat is on revival again in fashion trends with the support of Indian fashion industry professionals, creating new style statement by Indian designers at national and international platforms. New generation has understood the uniqueness of Ikat fabrics and its design development techniques. Different Ikat style patterns have been developed by designer for latest fashion trends in apparel, home furnishing and other products. New innovative approach in Ikat design pattern with the use of new color schemes, yarns and alternate training & development methods has infused new life for the sustainability of this fabric in future and improving the economy of traditional craftsmen and weavers.***

Academia can fully participate and cooperate to carry ahead this traditional textile –Ikat for future generations and its sustainability. Younger generation can be given awareness about Ikat techniques and potential of Ikat fabric in fashion trends by imparting training in methods & material in accordance with new age approach and trends. Development and training students on Ikat with handloom & digital tool to come up with new innovations.

Keywords: Future, Traditions, Textiles, Entrepreneur, Academics, Ecosystem, Sustainability, Economy

I. INTRODUCTION : IKAT A TRADITION

The Ikat has a long history and rich heritage across different communities and tribes in the world dating back to 7th centrury. Ikat is a yarn processed fabric prepared by yarn resist dyeing technique and weaving different and complex surface designs. This is an ancient technique of developing fabric surface designs by resisting the yarn in dyeing. Fabric surface design appears same on both sides of fabric. Designs can be created with range of colors and motif. Ikat surface design is not result of weaving only, instead it's by pre-processing of yarn binding and dyeing. Traditionally Ikat has been produced with cotton and silk yarns. Orissa state of India is the major producer of Ikat fabric. Ikat fabric is used for apparels, home furnishing and other fashion products. In Gujrat it is famous with the name of Patola – Patan Patola, is basically double Ikat technique. In Andhra Pradesh it is popular with Pochampally Ikat Sarees. Ikat has been used for apparels since last many centuries. Many designers have used and still using Ikat in their creative collections with variety of styles and design patterns to give it distinct look. Variety of motif, patterns, color schemes can be created on fabric surface in Ikat. The effects on fabric surfaces are blurred, can be abstract, mythological narrative - story teller, natural and other shapes can be created. With the advent of new age industrial development, Ikat needs to be adaptive to changing market demands, consumer environment and available resources for its future sustainability to carry this traditional textiles ahead. This is time to infuse new innovative approaches to Ikat tradition. In this regard academia can play a crucial role to carry ahead this traditional by their participation. We all together have to preserve and sustain this heritage craft by our contribution in different aspects. Ikat art can be sustained for future generation, as this art ha potential being eco-friendly, good employability, smaller investment and skill generation. In India, traditional hand yarn resist dyeing/printing has been practiced. This Ikat craft has potential to satisfy the modern style and consumer demand in contemporary trends. In the past few years the collaborative effort by Govt. agencies, craftsmen, SHG, NGO, Industry and academic institution has improved the growth rate of IKAT textile craft. In current scenario of handmade product has indicated the growth of handmade Ikat fabrics in fashion trends adding to sustainable future. Ikat in latest fashion trends is gaining a good level of popularity among customer satisfaction. Designers are using Ikat for their collections in with customized design. Evolution of Ikat was attached with tradition and cultural value of the said community, region and their emotions. Ikat in India was associated with Saris majorly, but in recent years it has been diversified with different dress materials, products and home furnishings. With growing popularity in current fashion trends, it has attracted a good consumer base in domestic and international market. Recently, Ikat has been show cased in exhibitions, trade fairs and other promotion platforms, it proves it popularity.

©IJRASET: All Rights are Reserved

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue XI Nov 2022- Available at www.ijraset.com

Now designers and academicians are innovating new design concept in Ikat craft. Design interventions in Ikat by designers and academicians can be instrumental for creating large market sector and its awareness designer collections and cluster study projects respectively. Ikat has been and will always be a traditional identity of India. Ikat of Odisha & Pochampally Ikat of Andhra has surpassed to best among world Ikat centers.

II. IKAT : METHODS & MATERIALS

An evident characteristic of Ikat textiles is the "blurriness" in the design which is achieved by resist dyeing yarn method for producing diversified designs on fabric surface. The pre-determined sections of yarns are blocked to resist the dye penetration by wrapping or covering or knotting threads and then dyed, the pattern emerges once the yarns are woven into fabric. Yarns are resisted by binding individual yarns or bundles of yarns with a tight wrapping applied in the desired pattern.

Traditionally cotton and silk yarns are used for the production of Ikat fabric. Traditionally natural dyes - vegetable and mineral were used to dye the yarns to create design pattern. But with the invention of inorganic dyes in 19th century, usage of synthetic dyes were practiced and adopted for dyeing of yarns. Natural dyes are still used in some of Ikat production centers to maintain its identity and heritage.

A. Types of Ikat

The two types of ikat are single ikat (Warp and Weft) and double ikat. By weaving a plain weft yarn with dyed warp or resisted weft yarns are inserted into a plain warp yarn that has been knotted and dyed, a single Ikat fabric is produced. In order to create elaborate yet well-composed designs, double ikat entails resisting both the warp and the weft. Ikat has a wide variety of designs, including simple symmetrical motifs, geometric shapes and abstract zoomorphics.

1) *Warp Ikat:* In a frame or loom, the yarn held under tension is referred to as the warp. Only the warp yarns are coloured in warp ikat and weft yarns are dyed in a solid colour. Even before the weft is woven in, the warp yarns wound onto the loom are plainly evident in the ikat design. Creating Ikat by dying the warp is easier than creating weft or double Ikat. The coloured threads are set out on the loom after being washed and dried in the shade. The weft, which is strung on tiny spindles, is then used to weave along the warp threads to produce the fabric. The pattern that must precisely surface on the warp and for which warp thread alignment is necessary is crucial. The final motif appears as a fine print rather than a weave if the alignment is exact. Another technique involves bleaching the warp yarn first, then dipping it in a solution of water, coconut oil, and rice starch to strengthen it before dipping it in dye baths. Dyed warp and weft thread colour work together to create patterns. A "mirror-image" or vertical-axis symmetry are features of some warp ikat traditions, along a centre line. With respect to a central warp thread group, whatever pattern or design is woven on the right is mirrored on the left in reverse order. There are three possible patterns: vertical, horizontal, and diagonal.
2) *Weft Ikat:* Weft Ikat is a weaving technique in which the weft thread carries the coloured designs, which only become visible as it is weaved into the warps to create fabric. The yarn that creates observable coloured patterns in weft Ikat takes significantly longer than it does in warp Ikat because the passes of the weft need to be properly regulated. This is a result of the craftsmen' meticulous attention required throughout the weaving process to retain the coherence and clarity of designs. Weft Ikat is preferred when the overall aesthetic value of the cloth, not the pattern precision, is more important. It is harder to weave accurately defined patterns because of the variation in weft colour. Because the weft is frequently a continuous strand, distortions or colour variations add up therefore, some patterns are altered during the weaving process into variable and irregular motifs. The weft yarn is dyed after being laid out on a chitiki frame to mark out motifs this frame is typical of Pochampally's weft ikat. In some precise weft ikat traditions like the one in Gujarat where two artisans weave the cloth, one passes the shuttle and the other modifies the position of the yarn in the shed.
3) *Double Ikat:* Prior to weaving, both the warp and the weft are resist-dyed in such a way that when the fabric is finished, the threads from both axis precisely mesh at the preset spots to create a motif or pattern. When weaving double Ikat which is done on a loom where maintaining the patterns requires care and accuracy. Sometimes, only when the warp and weft patterns overlap to create common, identical motifs are double ikats. In the event that they don't, the outcome is known as compound ikat. As seen by the intricate patterns and expert craftsmanship, the incorporation of the warp and weft technique in double ikat is time- and labor-intensive. The Nalgonda district of the state of Andhra Pradesh and Patan, Gujarat, where it is known as Patan Patola, are where the double ikat technique is most well-known in India. Another complex double ikat design is called Telia Rumal, which literally translates to "oily handkerchief" because to the oil treatment applied to the yarn before weaving.

©IJRASET: All Rights are Reserved

In Odisha, Pasapalli Ikat is produced. The word "Pasapalli" derives from "Pasa," a board game with four distinct sections (much like Ludo). Each pasapalli ikat saree or piece of clothing, which uses the same method as the Sambalpuri Ikat, features some variation of this checkerboard pattern.

The Patola loom produces mostly sari-length, which are among the most well-known textile crafts in existence today. As tie and dye work is done on both the warp and the weft threads, the weaving of a patolu is a creative process that the weaver imagines. The master artisan himself directs the use of precise dye extracts from natural sources throughout the production process.

Bundling of yarns planning is a tedious process and requires good expertise for achieving the required design on fabric surface. For better dyeing results, maximum of 20 number of yarns should be tied in one bundle.

Motif used in surface are from nature, abstract, geometrical and mythological narratives. Any numbers of shades can be used to create surface design. While working with colors, consideration is given to color schemes to achieve better results of design.

III.CURRENT TRENDS & CHALLENGES

A. Current Fashion Scenario

In the current fashion trends, fabrics with surface design are popular with classical or ethnic patterns. Ikat has this characteristic of surface design without any additional embellishment technique required to enhance its appearance and style. Ikat's Patan Patola sarees are always popular in some states of India being connected to traditions & heritage. Odisha's famous cotton Ikat fabric and Andhra's Pochampally Ikat have traditional roots keeping it intact with our culture & heritage, making it all time popular among fashion scenario in India and road. In the past few years Ikat has gained much more popularity and observed rise in growth of production centers. According to reports from Handicrafts Exports Council and Assocham, export of Ikat is on rise. Indian fashion designers are have contributed to large extents to make is popular in fashion trends by incorporating Ikat in their collections. Ikat is a new style statement these days among fashion lovers, even in youth wardrobe. Recent initiatives by Govt of India to boost economy, especially rural economy has encouraged to sustain the traditional handicrafts giving a supportive hand to Ikat also. Ikat fabric is gaining good popularity and acceptance among foreign tourists and in foreign markets. In India, many famous designers are using Ikat fabics for creating their collections with sarees, apparels and home furnishing range, even in many lifestyle accessories. Online platforms have also added to popularize the Ikat fashion.

B. Challenges – Market and Sustainability Issues

An analysis from business reports, it has been observed that Ikat market improving with latest fashion trends. Major challenge is to meet the growing consumer demand in the market. In Handloom sector, prime challenge is to produce fabrics in bulk quantity with fast pace industry to satisfy consumer demand. As design and development techniques are different in Ikat for producing fabric as compared to contemporary power loom sector. Production practices are tedious in Ikat development, yarn bundling with design plan is major hurdle for fast production.

The Ikat is family heritage craft practiced in different parts of India and limited to family members. Some craftsmen are reluctant to pass this traditional craft for any outsider except family members citing reasons i.e. art secret. Second another reason for not passing this traditional craft to any another family members or generation, is poor income and economy conditions. Many of artisans do not want to learn their children this craft due to bad income generation, even their children do not want to carry this traditional craft as an income generation source.

There are many reasons for low or poor income as mentioned below:

1) Low production rate with traditional equipment
2) Unable to meet higher consumer demands with in a limited time period
3) Many craftsmen find hard to afford required quantity/quality of natural yarns and dyes to store at once
4) Materials availability center are not situated near their villages or hometown
5) Exploitation by broker/agents or market mediators

World market is evolving and moving towards adopting sustainable fashion in century ahead. Indian traditional fabric are already sustainable textiles since beginning. But with the advent of synthetic materials and dyes, artisans started using synthetic materials to produce these crafts. These practices of synthetic dyes lost the real identity of many traditional crafts. Such practices also affected the Identity of Ikat in last few decades and lost the consumer base to some extent. Preparation of natural dyes is a long process, this is the reason to adopt & use synthetics dyes in Ikat by craftsmen. These synthetic dyes are easy to procure, use and good in color fastness. Due to such practice people lost interest and had trust issue of real Ikat in the past. Awareness of Ikat is still limited to few people, as common man living in urban & rural areas still unaware of this fabric art.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

Sustainable fashion is also a big challenge ahead for Ikat, as people and business organizations in other parts of world are adopting sustainable business practices. To sustain with future ahead craftsmen of Ikat have to adopt age old ecofriendly & sustainable practices to produce Ikat fabric with modernized method to produce in bulk quantity. To compete in the world market Ikat has to maintain its age old original identity for sustainable future. Increasing production capacity is a big task for this craft to sustain with fast pace market and consumer demand. Craftsmen are still using age old tools and techniques for production of fabric. They are still not aware of new emerging tools and other methods. Craftsmen are not updated with fast changing industry standards and norms to synchronize their craft production and marketing methods. Still their designs are in same old pattern style, it needs contemporarization to some extent for customized consumer demands for future sustainability.

IV. INNOVATIVE APPROACHES & ACADEMIA

Academia can be instrumental in strengthening the future of Ikat. Participation and contribution by academic & technical institutions can accentuate Ikat's bright future to new emerging trends and market. Study of traditional crafts & documentation is a part of study modules in design institution, but it is limited to survey, documentation and presentation of craft cluster. Faculty members can contribute to aware and revive the traditional textile craft as fashion fabrics by imparting training to students. Younger generation will carry this tradition of Ikat fabric by their design collections and creating consumer demand in future fashion trends. Young students are best ambassador to carry this Ikat tradition ahead for centuries. Students must be given hands-on training & experience by inviting craftsmen as guest faculty for some short period in institutions through workshop and design project. Ikat fabric development procedure and practices in workshop mode must be part a of study by developing sample fabrics. It will create better understanding of production methods of Ikat. Student can be given task to create innovations in Ikat. Academicians can contribute by innovative design interventions through collective approach as joint venture between craftsmen and faculty. Simpler design techniques must be developed & practiced to understand Ikat in-house studios in institutions. Sample development using natural and blended yarns available must be initiated for students and faculty members. This academia and craftsmen/artisan linking will create more awareness and market.

Fashion design department at FDDI-Fursatganj campus has initiated traditional craft development drive by training faculty members & students in this regards. In past few years, we have developed traditional textiles in our studios with traditional methods and materials to give better understanding to younger design program students with hands-on experience. Students and faculty were given task to innovate simple designs using traditional methods on handloom. Recently Ikat has been developed by faculty members of fashion department to understand the techniques of Ikat process. Innovative design fabric samples using simple motifs were developed in a very short span with natural and blended yarns. This drive encouraged the faculty and students confidence to develop traditional Ikat in house studios. This will also encourage to participate in the sustainability of Ikat under Sustainable goal - UNESCO. Through such drives academic institutions can contribute to preserve this traditional craft for future generations. At institutions innovative methods must be developed to increase the production methods of Ikat through design interventions. Ikat traditional crafts has been portrayed as hectic & tough to achieve in modern scenario, in actual when practiced it is an art to understand the process of making is not as much hectic. Though Ikat yarns bundling is tedious, but innovative methods can help to achieve it. Digital tools can be used to design and planning of Ikat design development process – yarn, material, count, color and variations. Ikat samples developed on rigid handloom in class studios.

V. IKAT PROCESS & SAMPLES

A. Warp Ikat (Refer TABLE I)



Fig. 1

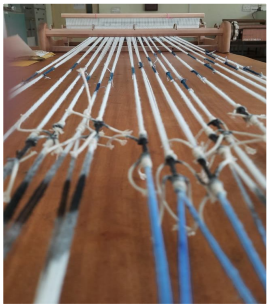


Fig. 2



Fig. 3

©IJRASET: All Rights are Reserved

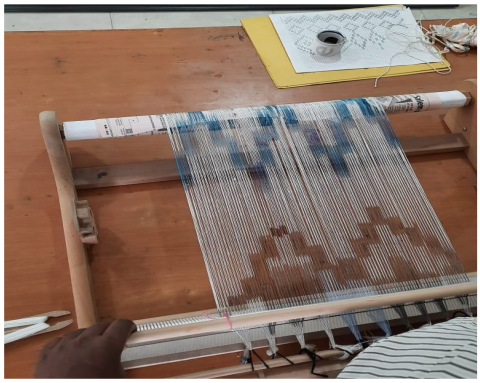


Fig. 4



Fig. 5



Fig. 6



Fig. 7

TABLE II
WARP IKAT WEAVING PROCESS

Figure No.	Details of Image Caption
Fig 1	In preparation for the dyeing process, bindings that resist dye penetration are applied to narrow or wide bundles of these threads in locations defined by the intended motif.
Fig 2	Yarns resisted and dyed according to the design worked out on graph paper. Yarns are tied, untied and retied several times for multiple colours according to the desired pattern.
Fig 3	Dyed warp yarns show up the blurred motifs stretched on loom for weaving.
Fig 4	Warp yarns wrapped on warp beam of rigid heddle handloom ready for weaving.
Fig 5	Depiction of warp ikat weaving process, solid colour weft is woven into dyed warp yarns. As the weaving proceeds, the motif gains clarity.
Fig 6	The image shows the woven ikat piece defining warp ikat.
Fig 7	Closer view of the weaving.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

B. Weft Ikat (Refer TABLE IIII)



Fig. 2



Fig. 2

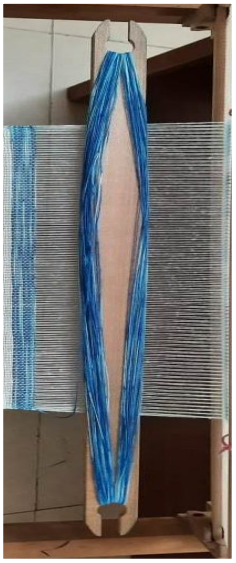


Fig. 3



Fig. 4



Fig. 5

TABLE IVI

WEFT IKAT WEAVING PROCESS

Figure No.	Details of Image Caption
Fig 1	For weft ikat, the wefts are held onto a wooden frame set and marked for resist and dyeing process.
Fig 2	The dyed weft being opened up and arranged properly for wrapping process.
Fig 3	The weft is then wound onto the flying shuttle, used to insert weft into the fabric.
Fig 4 & Fig 5	The solid colour warp is set onto the loom to begin weaving. The dyed weft is then woven to achieve the hazy pattern along the width of fabric.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

C. Double Ikat (Refer TABLE VII)



Fig. 3

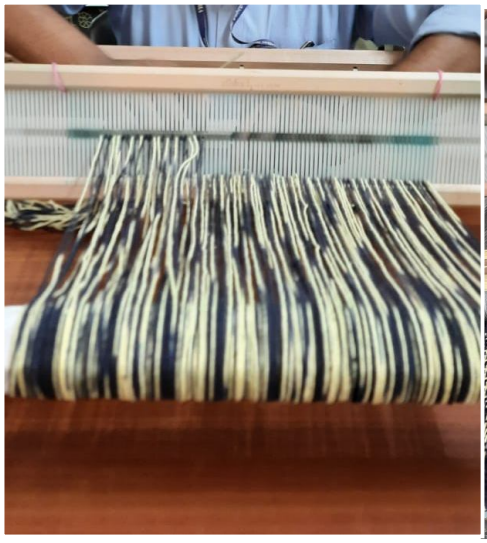


Fig. 2



Fig. 3



Fig. 4

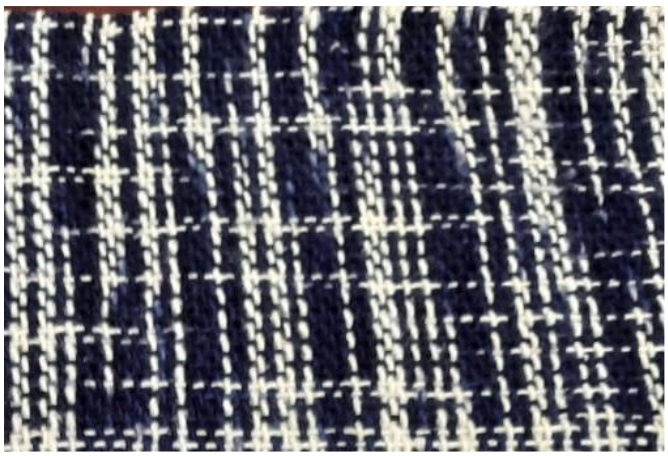


Fig. 5

TABLE VIII
DOUBLE IKAT WEAVING PROCESS

Figure No.	Details of Image Caption
Fig 1	The warp and weft yarns are dyed into desired pattern beforehand, ready to place on loom.
Fig 2	The warps are arranged on to the warp beam for weaving process.
Fig 3	Weaving process, weft is being woven into warp creating random double ikat pattern.
Fig 4	After every few inches of weaving process, a needle is used to arrange the thread according to the design. Every colour in every yarn has its own unique place in the design and it has to be carefully aligned with the pattern while weaving.
Fig 5	Closer view of double ikat weaving.

D. Final Samples



Weft Ikat



Warp Ikat



Double Ikat

VI. SUGGESTION & CONCLUSION

As the world is fast changing with modernization and technology, Ikat has to evolve the same. In this era of globalization, Ikat Craft has to sustain its bright future in world market and fashion trends. Ikat has to be accustomed the changing industry and consumer demands. During research survey of this Ikat craft, here are some suggestions to support Ikat for future sustainability.

1) Connecting industry, academia, designers and craftsmen for design innovation & interventions
2) Boosting R&D to innovate mechanized methods and process for fast productivity in Ikat
3) Training to traditional craftsmen with modern methods and materials
4) Understanding of market trends and customized consumer needs
5) Contemporization of Ikat designs for emerging markets and future trends
6) Contribution of institutions to support Ikat by incorporating craftsmen in academia as trainer/mentor to give actual hands-on experience to younger generations
7) Collaborative approach by academia with industry & craftsmen for industrial growth of Ikat.
8) Imparting training of digital tools to students, craftsmen, industry and faculty to understand techniques of Ikat in easier /simpler way.
9) Understanding of different market places – domestic & international for customization production.
10) Awareness of Ikat through design development project, workshop – practice based in academia.
11) Understanding of sustainable fashion & business practices in reality to compete with world market standards.

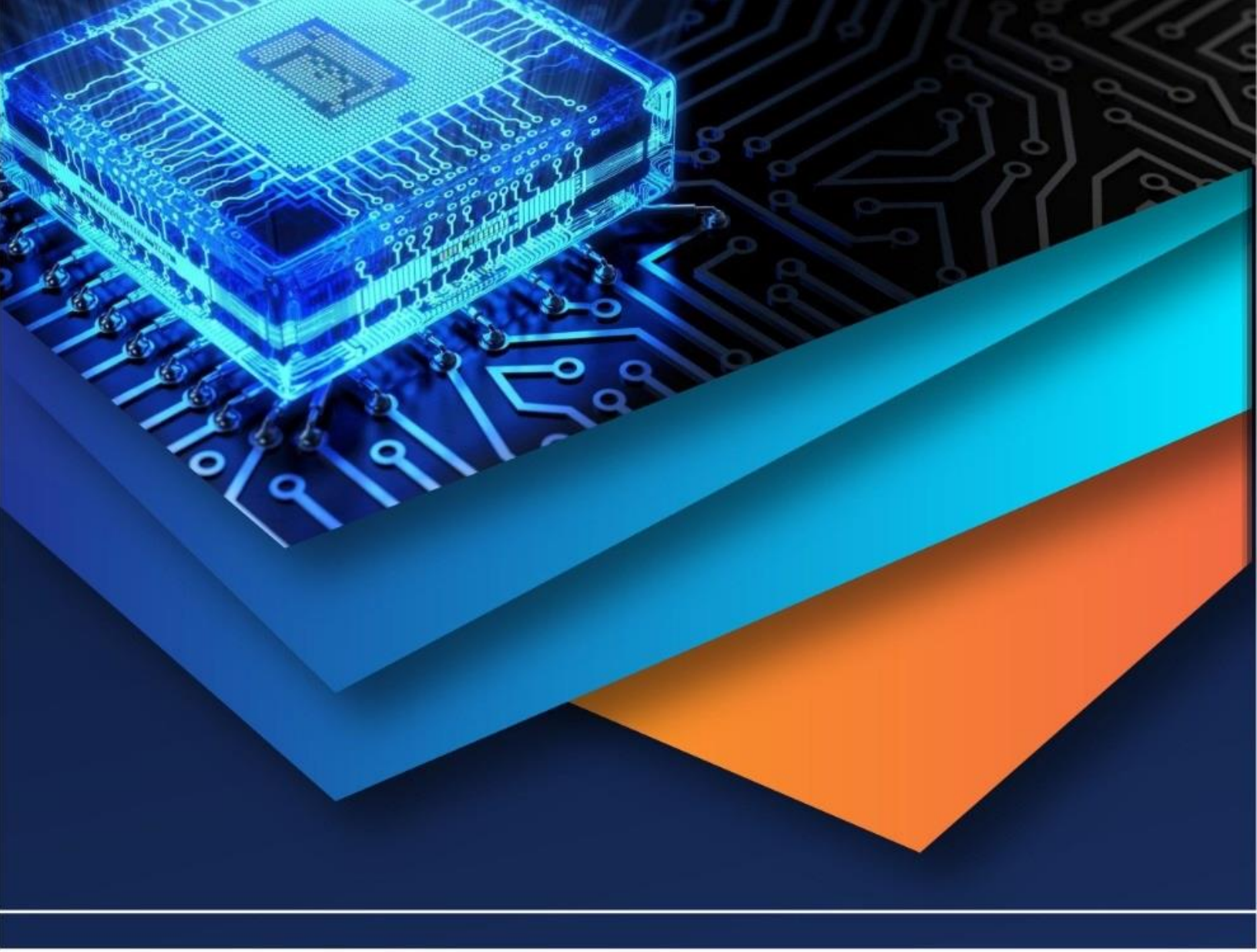
VII. ACKNOWLEDGEMENT

This research paper is dedicated to all those artisan/craftsmen, who carrying ahead this traditional craft for future generations with their hard work. This Ikat craft is a cultural heritage of India. Thanks to all craftsmen we had random interviews during the course of this research paper for giving us insight of Ikat and its techniques. We sincerely thank to FDDI management for supporting us with handloom facility in our studio enabling the development of fabric samples. Also thanks to all our fellow colleagues & student for supporting and appreciating us.

REFERENCES

[1] https://www.newindianexpress.com/magazine/2021/jan/03/break-for-sustainable-fashion-in-india-on-the-horizon-as-pollution-wastage-concerns-rise-2243759.html
[2] https://timesofindia.indiatimes.com/life-style/fashion/buzz/ikat-is-back-thanks-to-indian-fashion-designers-and-bollywood-stars/articleshow/78078641.cms
[3] IOSR Journal of Polymer and Textile Engineering (IOSR-JPTE) e-ISSN: 2348-019X, p-ISSN: 2348-0181, Volume 6, Issue 1 (Jan. - Feb. 2019), PP 28-51
[4] www.iosrjournals.org
[5] https://indigowares.com/how-is-ikat-pattern-made
[6] https://en.unesco.org/sustainabledevelopmentgoals
[7] National Museum, New Delhi

[8] https://www.epch.in
[9] Fashion Design Council of India (FDCI)- http://www.fdci.org
[10] https://indigowares.com/how-is-ikat-pattern-made
[11] https://cdnmedia.handweaving.net/DigitalArchive/articles/nb31_ikt.pdf
[12] Bijoy Chandra Mohanty; Kalyan Krishna, Ikat fabrics of Orissa and Andhra Pradesh, Vol 1, Calico Museum of Textiles, 1974, Ahemdabad
[13] https://greenwithrenvy.com/fabulous-handwoven-indian-ikats
[14] https://www.assocham.org/upload/docs/Textile-and-Appreal-Study.pdf
[15] https://www.pochampallysarees.com/product-category/ikat-designer-silk-saree



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)