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Azadiracta Indica - Therapeutic Uses and Phytochemicals

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Abstract: ***Plants have been used for medicinal purposes since before pre-historic period. The main important factor is that the medicinal plants have no side effects or very less side effects. India has known to be rich repository of medicinal plant. Ayurveda and unani medicine are mostly practiced in India. The developing countries like china and India have large repository of medicinal plants. The common plants like amla, ginger, turmeric,tulsi,pepper,curryleaves are used by people in their daily diet (India) lots of people are using tulsi for medicinal purpose and some use tulsi for doing poojas in day today life. In these studies the phyto-chemicals and therapeutic use for neem plant (azadiracta indica) was found and in future studies the neem plant can be used to find new drug molecule which can be used for the treatment of diseases like malaria, bacterial infection, chicken box, small box etc. IMPPAT was one of the medicinal plant phyto-chemical analyzing database by using these database more than twenty phyto chemical were found and lots of therapeutic uses for neem was analyzed.***
Keywords: Azadiracta indica, phyto chemicals, Therapeutic uses, IMPPAT database

I. INTRODUCTION

The Medicinal plants (medicinal herbs) have been used in traditional medicine and many new medicines were discovered for many disease and it was practiced since prehistoric times. The phytochemical compounds plays a major role in producing medicinal drugs. Plants also synthesize hundreds of phytochemical compounds for functions including defense against insects, fungi, diseases, and herbivorous mammals. The medicinal plants was also used in the spiritual activities. The several synthetic drug causes many side effects so nowadays people believe in medicinal plants and they follow traditional methods to treat disease using medicinal plants. The medicinal plants are a precious gift to mankind from god. India has been known to be rich repository of medicinal plants. The forest in India has large repository of medicinal plant and herbs. World health organization estimated that nearly 80% of the world population use medicinal plant to treat disease. The fast developing countries like India and china use medicinal plant for many ailments when compared to other countries. Medicinal plants such as aloe, tulsi, zinger, neem and turmeric cure several common ailments and used in daily diet.

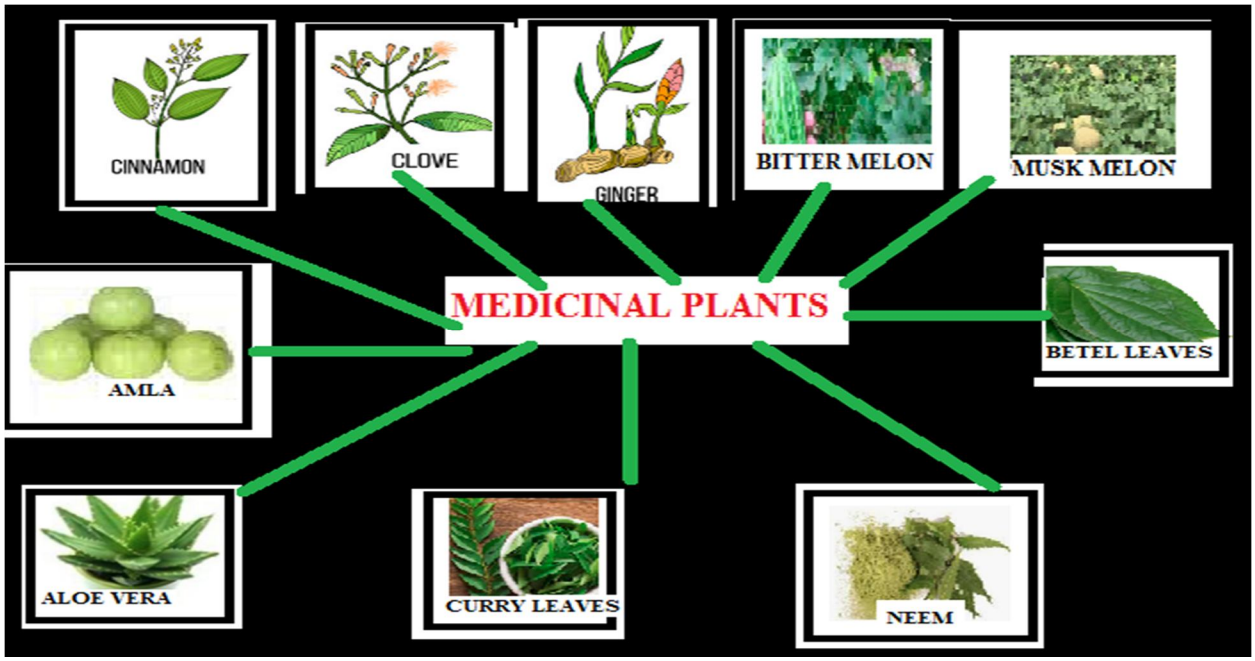


Figure 1 Medicinal Plants.

A. *Plant Phytochemical*

Phytochemicals are important compounds that are produced by plants ("phyto = plant").Phyto chemicals are found mainly in fruits, vegetables, grains, beans, and other plants especially medicinal plants. Some of these phytochemicals present in the medicinal plants are believed to protect cells from damage, cure disease, producing new drug molecule, and many chemical molecules helps to stop cancer producing carcinogens. Phytochemicals are chemical compounds produced by plants, generally to help them thrive or thwart competitors, predators, or pathogens. The name was derived from Greek word “phyto = plant”. Not all phytochemicals are good some are very poisonous and leads to death and others as traditional medicine. Chemicals that are produced by plants through primary or secondary metabolism. They generally have biological activity in the plant host and play a role in plant growth or defense against competitors, pathogens, or predators. Plants produce phytochemicals in order to protect themselves against environmental threats like predator insects, pollution and disease. Phytochemicals are described as non-essential nutrients found in plant food, non-essential means they are not required to sustain life.

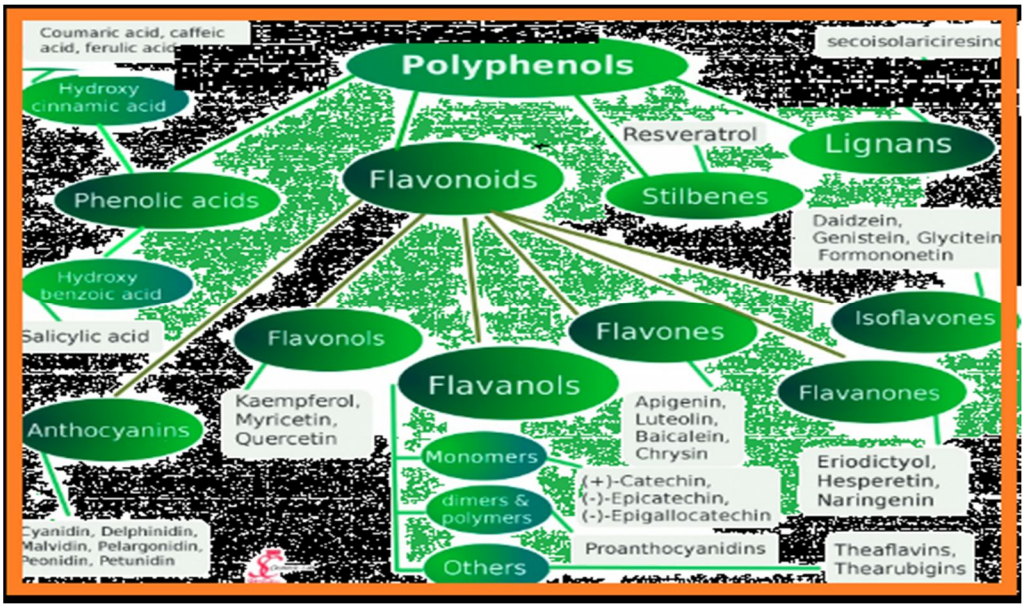


Figure 2 Phyto-Chemicals.

II. MATERIALS AND METHODS

A. *IMPPAT*

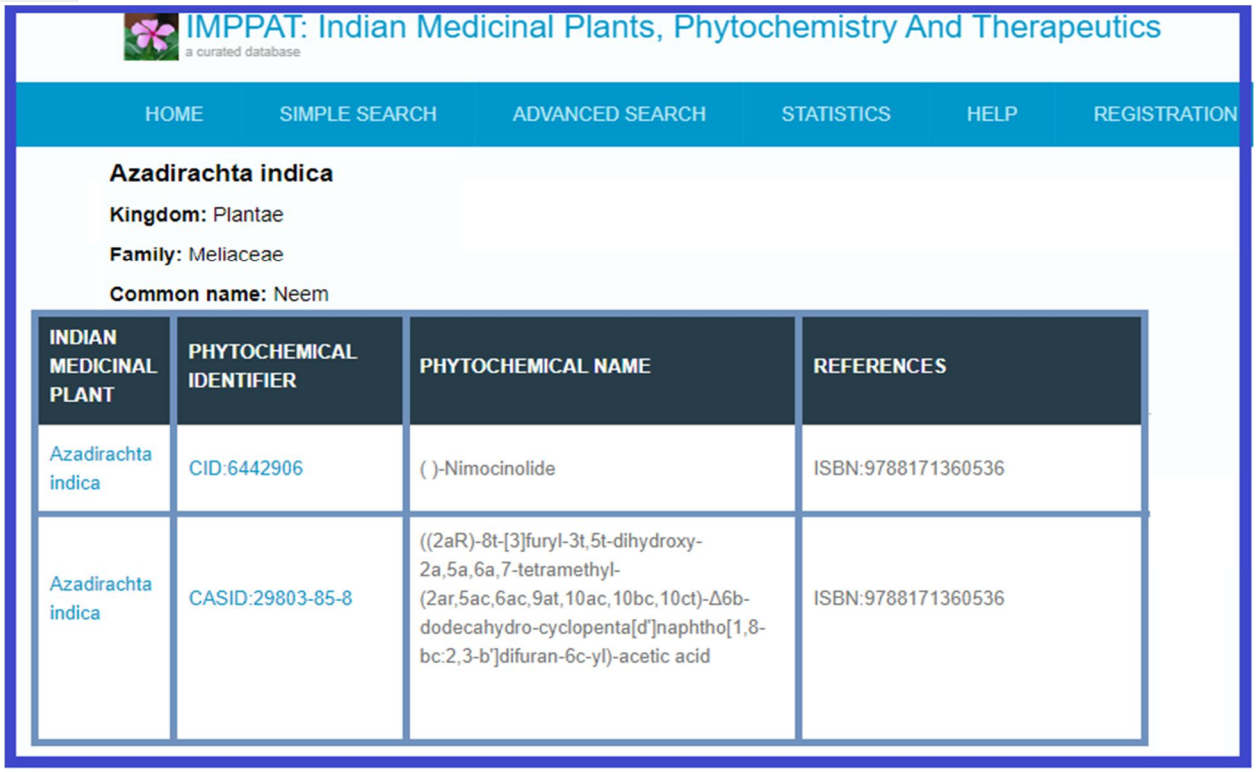
Indian Medicinal Plants, Phytochemistry And Therapeutics (IMPPAT) is a curated database which has been constructed via literature mining followed by manual curation of information gathered from more than 50 specialized books on traditional Indian medicine, more than 7000 abstracts of published research articles and other existing database resources. IN the below studies imppat database is used to find the therapeutic uses and phyto-chemical compound present in the insulin plant was found.

Medicinal plant their uses and phyto chemicals.

Neem (Azadiracta Indica) 

B. *Medicinal Uses*

Neem leaf is one of the wonderful traditional medicine most commonly used in india.it was also used in spiritual activities. The phytochemical compound present in the neem tree was used to treat leprosy, eye disorders, bloody nose, intestinal worms, stomach upset, loss of appetite, skin ulcers, diseases of the heart and blood vessels (cardiovascular disease), fever, diabetes, gum disease (gingivitis),liver problems, pimple and skin disease. The leaf is also used for birth control and to cause abortions. Neem contains chemicals that might help reduce blood sugar levels, heal ulcers in the digestive tract, prevent pregnancy, kill bacteria, and prevent plaque formation in the mouth. Neem (Azadirachta indica) is recognized as a medicinal plant well known for its antibacterial, antimalarial, antiviral, and antifungal properties. The neem is an effective antibacterial agent against the bacterial pathogen V.vulnificus, and it was found to be nontoxic at lower concentrations to human lymphocytes.



IMPPAT: Indian Medicinal Plants, Phytochemistry And Therapeutics
a curated database

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Azadirachta indica

Kingdom: Plantae

Family: Meliaceae

Common name: Neem

INDIAN MEDICINAL PLANT	PHYTOCHEMICAL IDENTIFIER	PHYTOCHEMICAL NAME	REFERENCES
Azadirachta indica	CID:6442906	( )-Nimocinolide	ISBN:9788171360536
Azadirachta indica	CASID:29803-85-8	((2aR)-8t-[3]furyl-3t,5t-dihydroxy-2a,5a,6a,7-tetramethyl-(2ar,5ac,6ac,9at,10ac,10bc,10ct)-Δ6b-dodecahydro-cyclopenta[d']naphtho[1,8-bc:2,3-b']difuran-6c-yl)-acetic acid	ISBN:9788171360536
Azadirachta indica	CHEMSPIDER:156225	(5alpha,7alpha,8eta,13alpha,17alpha)-17-(3-Furyl)-4,4,8-trimethyl-3,16-dioxoandrosta-1,14-dien-7-yl acetate	ISBN:9788171360536
Azadirachta indica	CID:6450192	3-Deacetylsalannin	ISBN:9788171360536
Azadirachta indica	CID:16219576	3beta-Hydroxy-20(29)-lupene	ISBN:9788171360536
Azadirachta indica	CID:102285347	6-Deacetylnimbinene	DOI:10.15482/USDA.ADC/1239279, ISBN:9788171360536
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Azadirachta indica	CID:225689	.beta.-Amyrin	ISBN:9788171360536
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Azadirachta indica	CID:8067	1-Pentanethiol	ISBN:9788171360536
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Azadirachta indica	CID:10134	AC1L1UKB	ISBN:9788171360536
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Azadirachta indica	CID:44575793	MELIANONE	ISBN:9788171360536
Azadirachta indica	CASID:78916-53-7	methyl 2-(2-(furan-3-yl)-5,6-dihydroxy-1,6,9a,10a-tetramethyl-9-oxo-3,3a,4a,5,5a,6,9,9a,10,10a-decahydro-2H-cyclopenta[b]naphtho[2,3-d]furan-10-yl)acetate	ISBN:9788171360536
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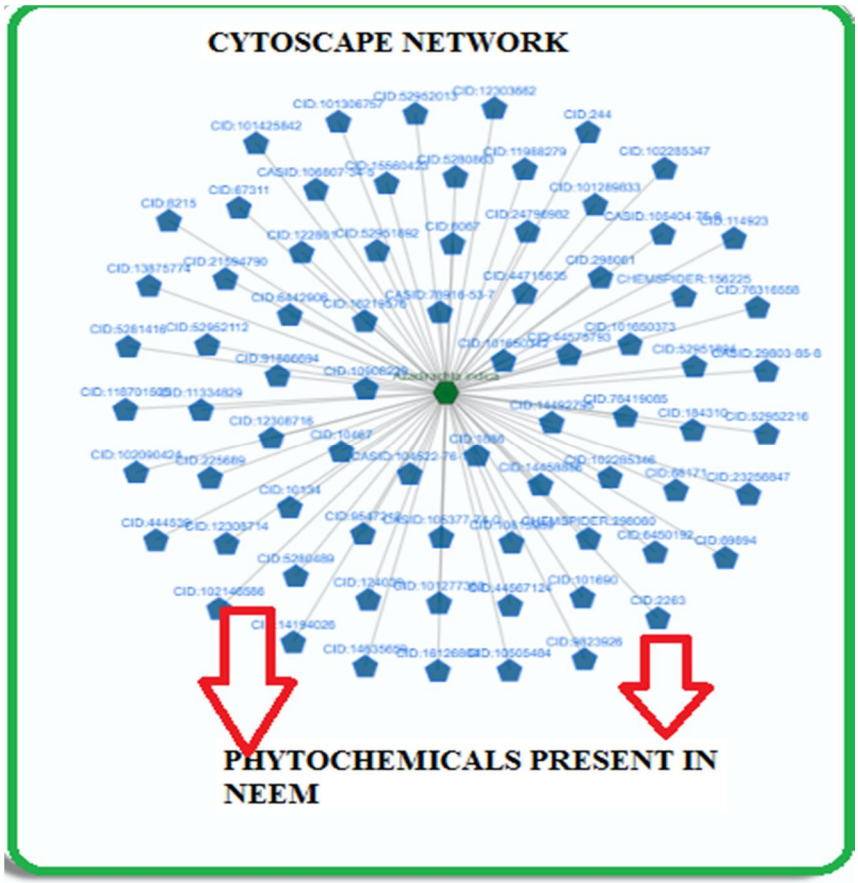

III. THERAPEUTIC USES

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INDIAN MEDICINAL PLANT	THERAPEUTIC USE
Azadirachta indica	AMENORRHEA
Azadirachta indica	ANOREXIA
Azadirachta indica	BRONCHITIS
Azadirachta indica	DIABETES
Azadirachta indica	DYSPEPSIA
Azadirachta indica	ECZEMA
Azadirachta indica	GINGIVITIS
Azadirachta indica	LEPROSY
Azadirachta indica	LUMBAGO
Azadirachta indica	MALARIA
Azadirachta indica	MEASLES
Azadirachta indica	ODONTALGIA
Azadirachta indica	OPHTHALMOPATH
Azadirachta indica	OTALGIA
Azadirachta indica	PERIODONTITIS
Azadirachta indica	PRURITUS
Azadirachta indica	SCABIES
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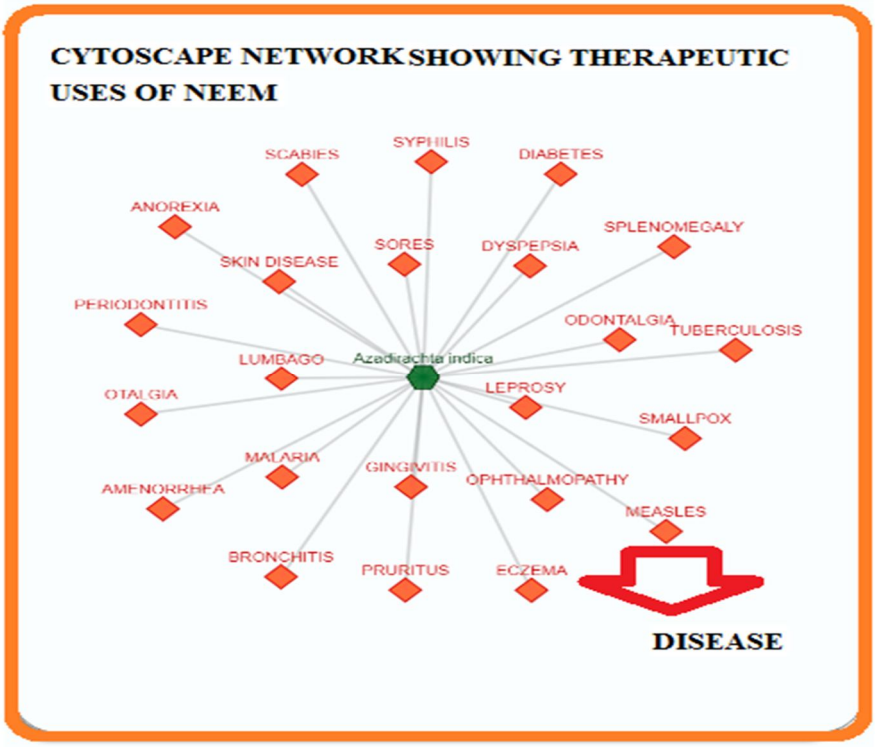
Azadirachta indica	TUBERCULOSIS



IV. CONCLUSION

The Neem (Azadirachta indica) is an evergreen robust tree, belongs to the family Meliaceae..The Chemical constituents contain many biologically active compounds that can be extracted from neem, including alkaloids, flavonoids, triterpenoids, phenolic compounds, Carotenoids, steroids and ketones. Neem leaf is used for leprosy, eye disorders, bloody nose, intestinal worms, stomach upset, loss of appetite, skin ulcers, diseases of the heart and blood vessels (cardiovascular disease), fever, diabetes, gum disease (gingivitis), and liver problems. The leaf is also used for birth control and to cause abortions Neem has been shown to provide an antiviral treatment option for small-pox, chicken-pox, and warts. It is particularly useful for these conditions when applied directly to the skin. This is due in part to its ability to inhibit viruses from multiplying and spreading. In the above studies the phytochemical compound and therapeutic uses for neem plant has been found and in further studies this founding will be very helpful in finding drug molecule made from azadiracta indica (phyto-chemicals) to treat many diseases.

REFERENCE

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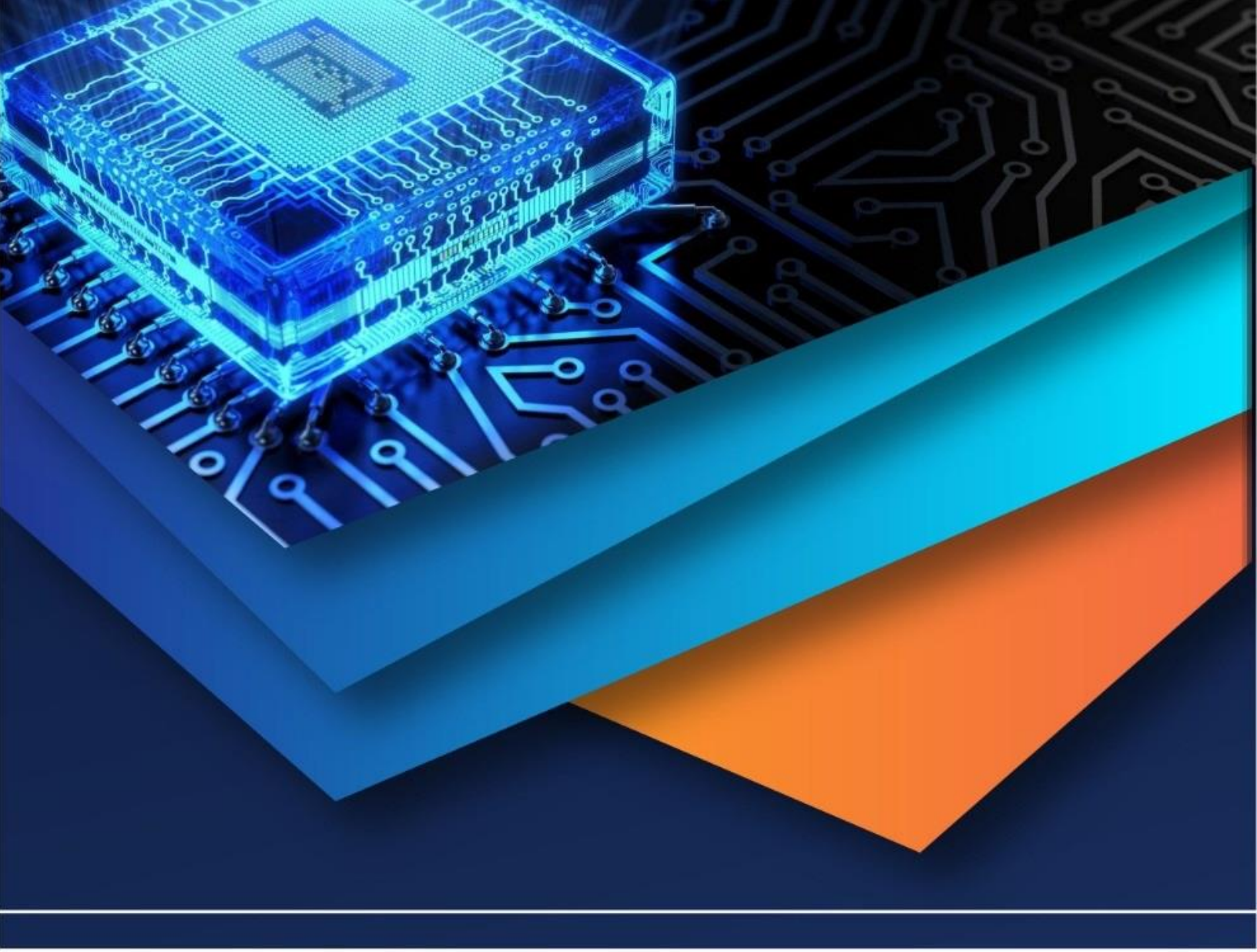

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