



O'zbekiston Respublikasi oliy va o'rta
maxsus ta'lim vazirligi



**TOSHKENT IRRIGATSIYA VA QISHLOQ XO'JALIGINI
MEXANIZATSIYALASH MUHANDISLARI INSTITUTI**

Fan: Elektrotexnika, elektronika va elektr yuritma.

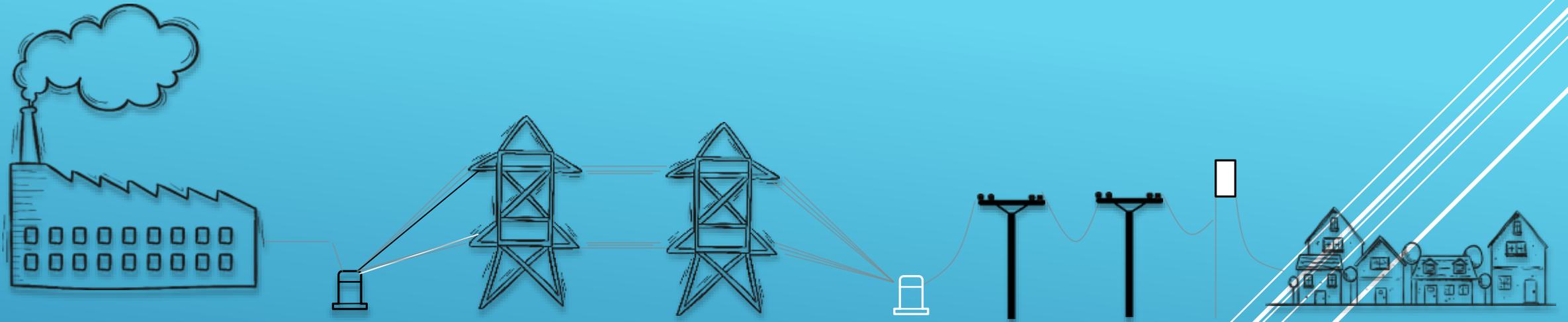
Kafedra: Elektrotexnika va vexatronika

Mavzu: Transformatorlar

Topshirdi : QXM 2/1 SHARIPOV SH

Qabul qildi: Gapparov.A.U

Toshkent - 2019



TRANSFORMATORLAR





REJA

- ▶ 1. TRANSFORMATOR TUSHUNCHASI
- ▶ 2. TRANSFORMATOR TARIXI
- ▶ 3. TRANSFORMATOR VAZIFASI



TRANSFORMATOR

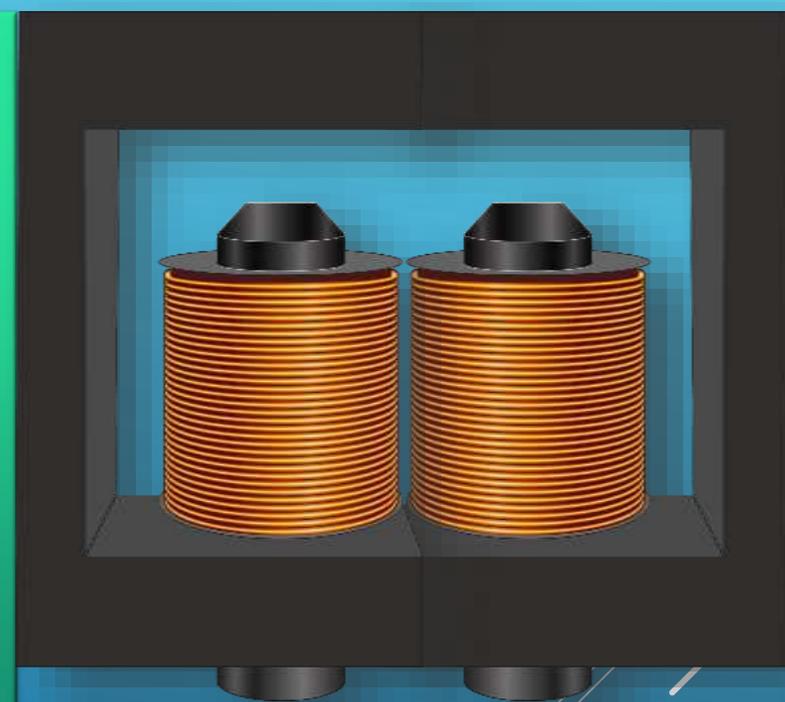
TRANSFORMATOR (LOT. TRANSFORMO-O'ZGARTIRAMAN) – TEXNIKADA – ENERGIYA YOKI OBYEKT LARNING BIRON BIR MUHIM XOSSASI (MAS. TOK KUCHI, KUCHLANISHNI VA BOSHQALAR) NI O'ZGARTIRISH UCHUN MO'LJALLANGAN QURILMA

TRANSFARMATORLAR TURLARI

- ▶ **Gidrotransformatorlar**
- ▶ **Fototransformatorlar**
- ▶ **O'YUCH (o'ta yuqori chastota)**
- ▶ **Avtotransfratorlar**
- ▶ **Payvandlash transformatorlar**
- ▶ **O'lchov transformatorlar**
- ▶ **Bir fazali va uch fazali kuch transformatorlar va boshqalar**

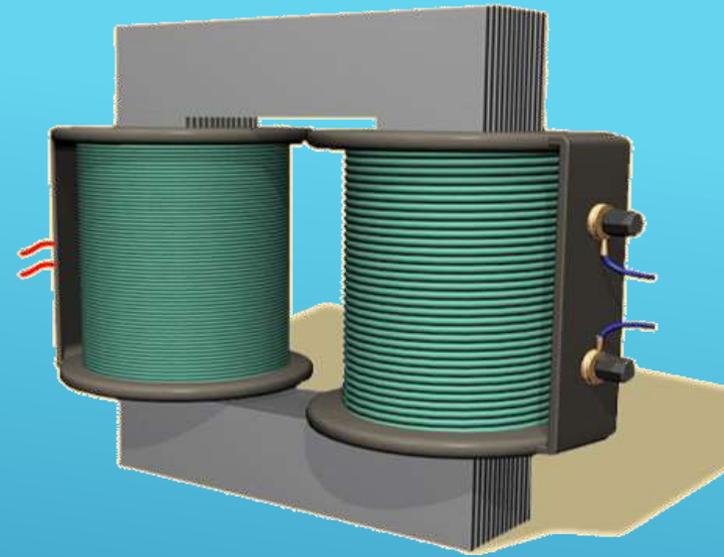
- ▶ **Elektr transformatorlarni keng tarqalgan turi bu kuch transformatorlaridir. Ular elektr uzatish liniyalari (EUL)ga o'rnatiladi. Bunday transformatorlar elektr styalarning generatorlari ishlab chiqargan tok kuchlanishini 10-15 kV dan 220-750 kV gacha kuchaytirib beradi**

▶ **TRANSFORMATOR
PLYONKALARDAN YIG'ILGAN
YOPISTIRILADIGAN
PO'LATDAN YASALGAN
YADRODAN IBORAT**



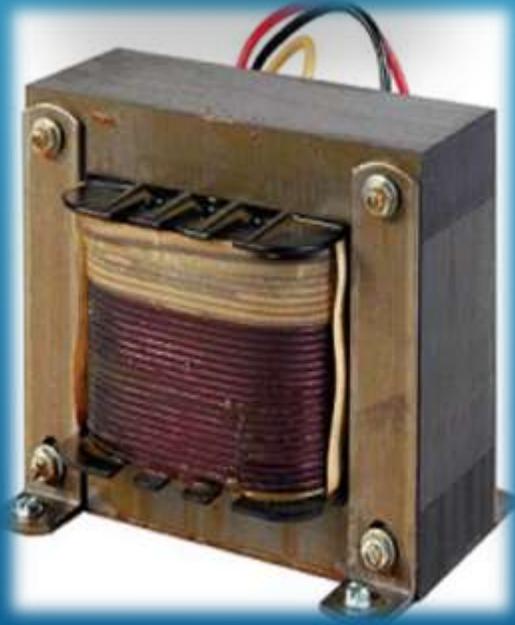
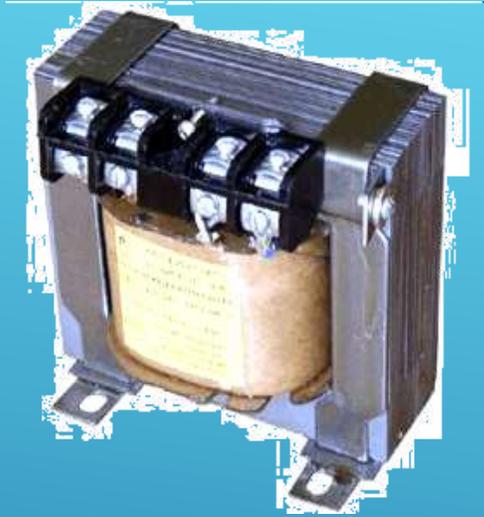


Transformatorlarning chulg'amlari misdan, magnit o'tkazgichlari sovuqlayin prokatslab ishlab chiqarilgan elektrotexnika po'latidan tayyorlanadi.





- ▶ Elektr transformatorning quruq va moyli turlari mavjud. Quruq transformatorlar havoda moysiz sovutiladi, moyli transformatorlarning magnit o'tkazgichi va chulg'ami mineral moy to'ldirilgan bakka joylashtiriladi. Moy izolyatsiya va sovituvchi vazifasini bajaradi



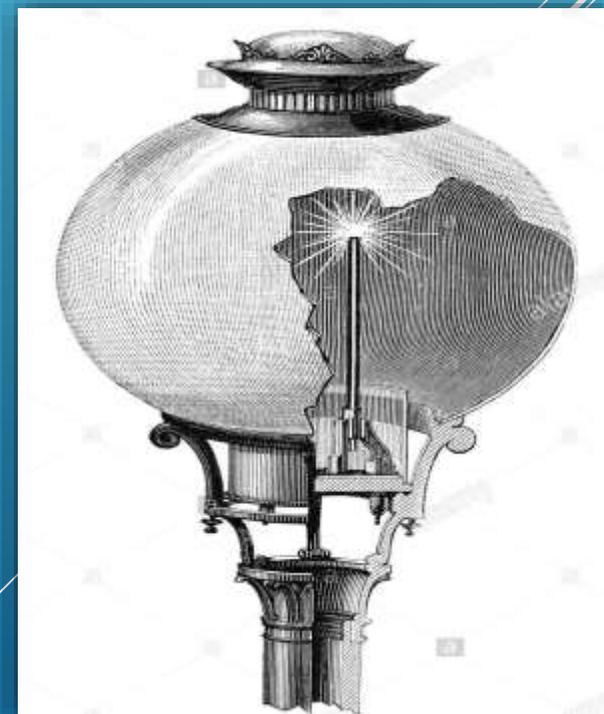
Faraday 1831-yil 29-avgustda ‘Faraday induksion lentasi’ deb nomlangan “dunyodagi halqani” ni kashf etdi, bu aslida dunyodagi birinchi prototip transformatoridir. Ammo Faraday uni faqat elektromagnit induktsiya prinsipini namoyish qilish uchun qo’llagan, u amaliy foydalanishga ega bo’lishi mumkin deb hisoblamagan.

1881-yilda Lucien Gaulard va Jon Dixon Gibbs Londonda “ikkinchi qo’ldan ishlab chiqaruvchi” deb nomlangan qurilmani yaratishdi va Westinghouse tomonidan AQSH ushbu texnologiyani sotdi bu birinchi amaliy kuch transformatorlari, lekin birinchi transformatorlardan emas.

Transformator prinsiplarini, birinchi Maykl Faraday tomonidan kashf etildi



- ▶ **ELEKTR TRANSFORMATORNI BIRINCHI BO'LIB P.N. YABLOCHKOV (1876y) VA I.F.USAGIN (1882y) YARATGAN VA AMALDA ISHLATGAN**



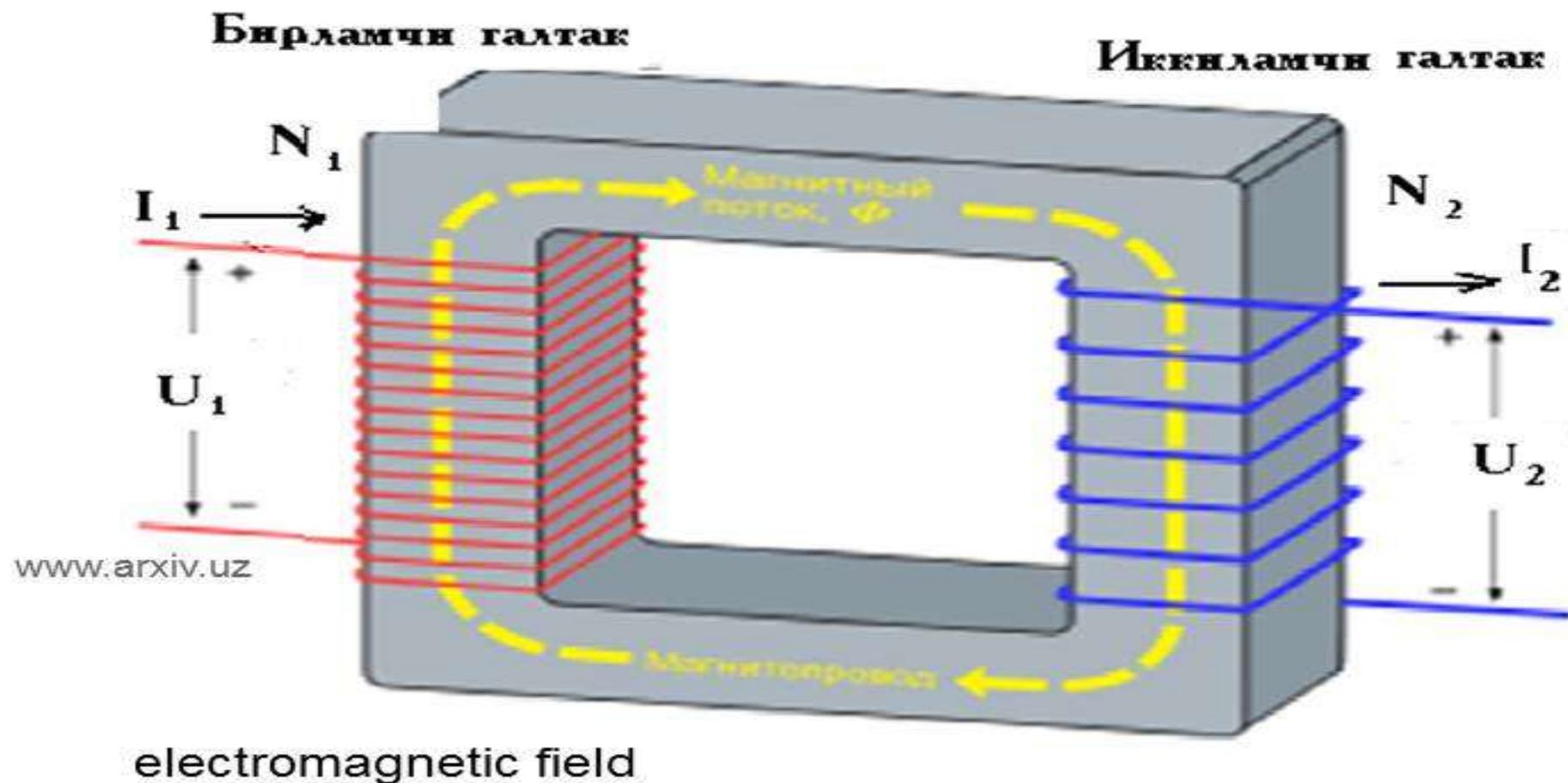
▶ **M.O. DOLIVODOBROVOLSKIY**
1890-YILDA UCH FAZALI ELEKTR
TRANSFORMATORNI YARATDI

Decorative white lines consisting of several parallel diagonal strokes in the bottom right corner of the slide.

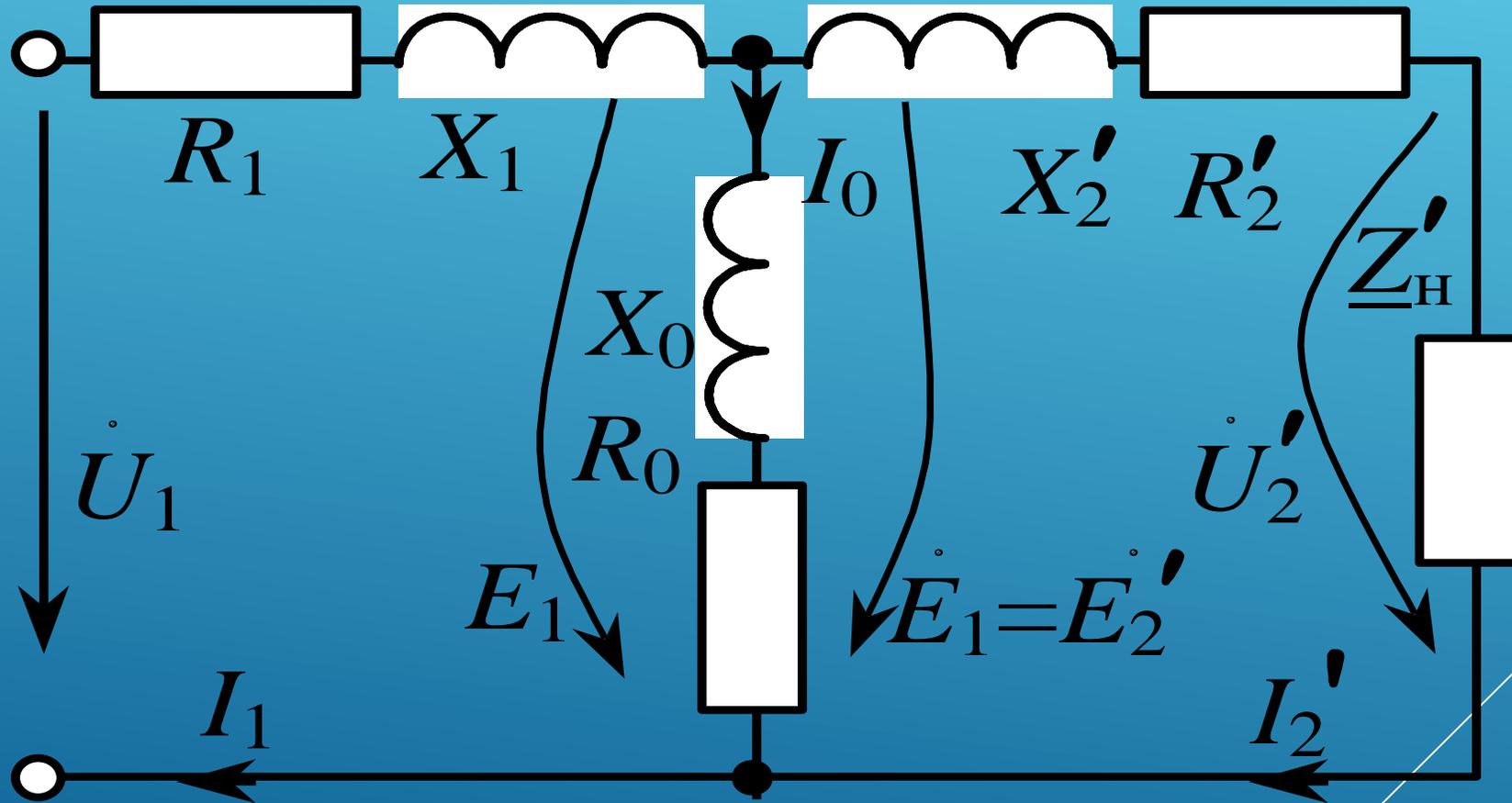
TRANSFORMATOR BAJARISH VAZIFASIGA QARAB QUYIDAGI TURLARGA BO'LINADI

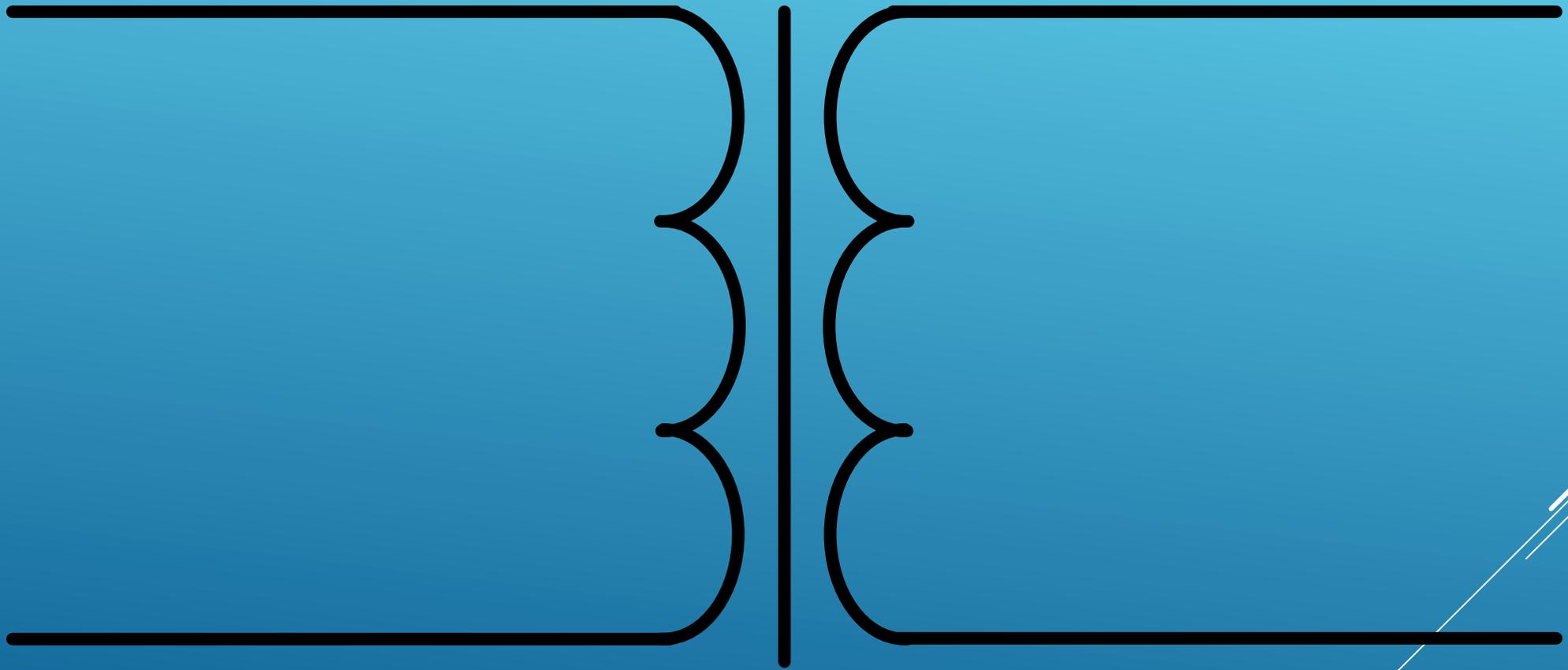
- ▶ ELEKTR ENERGIYASINI UZATISH VA TAQSIMLASH UCHUN MO'LJALLANGAN KATTA QUVVATLI (UCH FAZALI) TRANSFORMATORLAR
- ▶ KERAKLI JOYDA KUCHLANISHNI KENG DOIRADA O'ZGARTIRIB BERISH VA DVIGATELLARNI ISHGA TUSHIRISH UCHUN MO'LJALLANGAN AVTOTRANSFORMATORLAR
- ▶ TAQSIMLASH TARMOQLARIDAGI KUCHLANISHNI ROSTLAB TURISH UCHUN MO'LJALLANGAN INDUKTSION ROSTLAGICHLAR
- ▶ O'LCHOV ASBOBLARI VA HIMOYA VOSITALARINI SXEMALARGA ULASH UCHUN MO'LJALLANGAN O'LCHOV TRANSFORMATORLAR.
- ▶ PAYVANDLASH, QIZDIRISH PECHLARI SINOV, TO'G'RILASH VA HAKOZOLAR UCHUN MO'LJALLANGAN MAXSUS TRANSFORMATORLAR.

Бир фазаги трансформаторлар

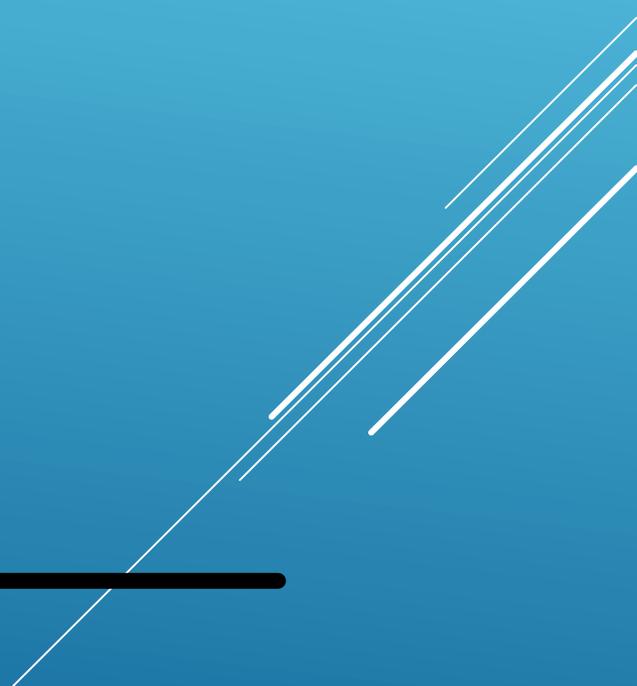


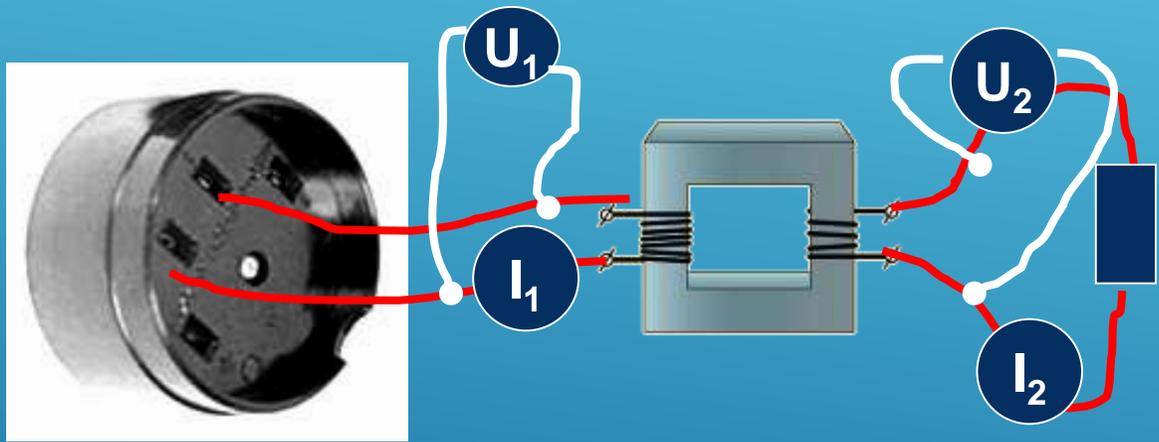
BIR FAZALI TRANSFORMATORNING SXEMASI



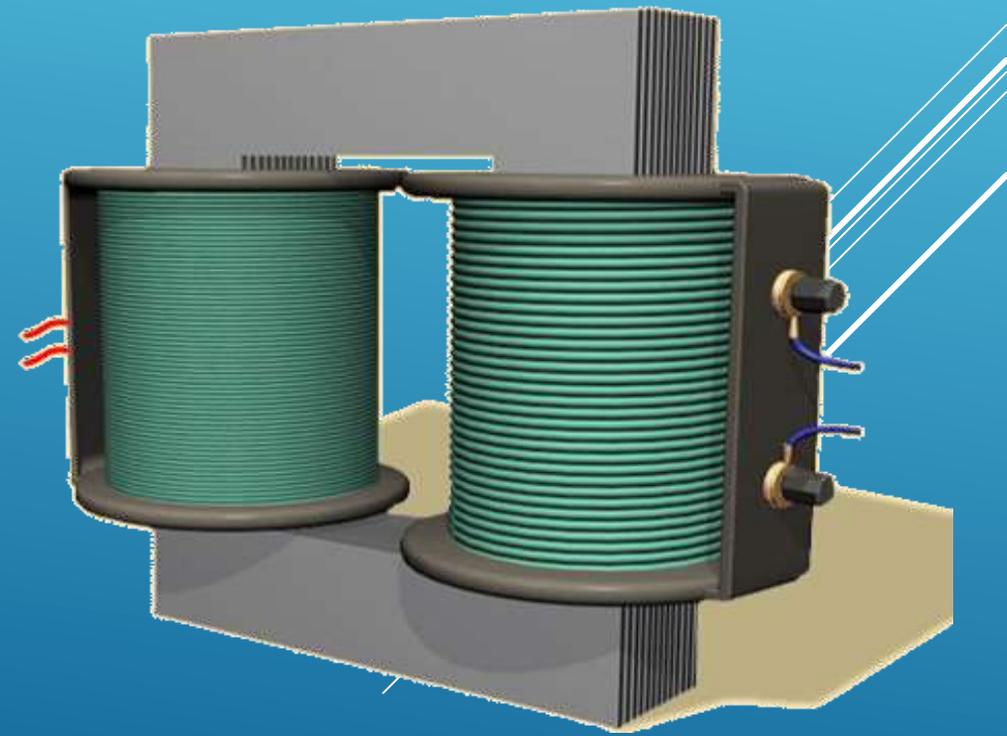


CHO'LG'AM





380/220B



K-TRANSFORMATSIYA KAEFFITSENTI

$$k = \frac{E_1}{E_2} = \frac{w_1}{w_2} \approx \frac{U_1}{U_2}$$

- ▶ AGAR $k > 1$ BO'LSA Kuchaytiruvchi
- ▶ AGAR $k < 1$ BO'LSA Kamaytiruvchi

$$U_1 I_1 \approx U_2 I_2$$

**E'TIBORINGIZ
UCHUN KATTA
RAHMAT!**

