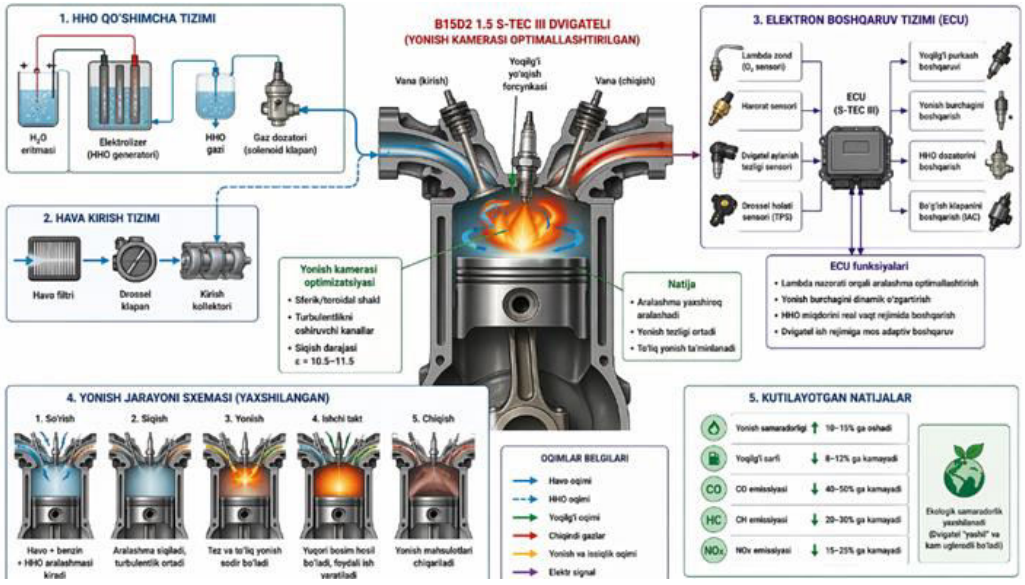
B15D2 1.5 S-TEC III DVIGATELIDA YONISH JARAYONINI YAXSHILASHNING KONSTRUKTIV YECHIMI

prof. Musabekov Z.E., PhD Uralova H. Z, mag. Abdullajonov S. I.
Toshkent davlat texnika universiteti,
Tel.: +998 77 340 62 77

Transport dvigatellarini rivojlantirishda energiya samaradorligi, ekologik xavfsizlik va iqtisodiylik asosiy mezon bo‘lib qolmoqda. Shu nuqtayi nazardan mualliflar tomonidan O‘zbekistonda eng kop B15D2 1.5 S-TEC III benzinli ichki yonuv dvigatelida yonish jarayonini takomillashtirishga qaratilgan konstruktiv yechim modeli ishlab chiqildi. Model yoqilg’i aralashmasi, optimallashtirilgan yonish kamerasi shakli va elektron boshqaruv tizimi orqali yonish samaradorligini oshirishga asoslanadi.

Ushbu maqolada ichki yonuv dvigatellarining "yashil iqtisodiyot" shakllanishidagi roli muhokama qilinib, tahlil qilinadi hamda ularni almashtirish yoki modernizatsiya qilish bo‘yicha yechimlar taklif etiladi. Ichki yonuv dvigatellarining "yashil iqtisodiyot" bilan aloqasi, shuningdek, ularning energiya samaradorligi va tabiiy ekotizimlarga ta’siri muhim va dolzarb masaladir. Ushbu dvigatellar asosan benzin va dizel kabi neft mahsulotlarining yonishi natijasida energiya hosil qiladi. Biroq, bu jarayon atmosferaga zararli gazlar chiqarib, atrof-muhitning ifloslanishiga olib keladi. Yashil iqtisodiyot – atrof-muhitni himoya qilish, tabiiy resurslardan samarali foydalanish va barqaror rivojlanishni ta’minlashga qaratilgan iqtisodiy modeldir.

B15D2 dvigatelida yonishning to‘liq emasligi, issiqlik yo‘qotishlarining yuqoriligi, CO, CH va NOx chiqindi gazlarining mavjudligi asosiy kamchiliklardir, shu sababli yonish jarayonini konstruktiv va funksional jihatdan optimallashtirish talab etiladi.



1-rasm. B15d2 1.5 S-TEC III dvigatelida yonish jarayonini yaxshilashning konstruktiv yechim sxemasi

Yonish kamerasini optimallashtirish porshen tepasini sferik yoki toroidal shaklga o‘zgartirish, turbulentlikni oshiruvchi kanallarni shakllantirish, siqish darajasini oshirish va natijada aralashma yaxshiroq aralashadi va yonish tezligi ortib minimal yonish energiyasini kamaytirib to‘liq yonishni ta’minlaydi

Yonish samaradorligi quyidagicha ifodalanadi:

$$\eta = \frac{Q_{foydali}}{Q_{yoqilg'i}}$$

$$\eta - \text{yon. samaradorligi;}$$
$$Q_{foydali} - \text{foydali issiqlik;}\ Q_{yoqilg'i} - \text{yoq. umumiy issiqligi}$$

Taklif etilgan konstruktiv yechimlar asosida yonish samaradorligiy 10–15% ga oshaishiga yoqilg‘i sarfi 8–12% ga kamayishiga hamda chiqindi CO gazi 40–50% ga CH gazi 20–30% ga NOx gazi 15–25% ga kamayishiga erishiladi
Yonish kamerasi geometriyasini optimallashtirish B15D2 1.5 S-TEC III dvigatelida yonish jarayonini yaxshilash uchun taklif etilgan konstruktiv yechim modeli kompleks yondashuvga asoslanadi.

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