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PETROL ENGINES EFFECTIVITY DURING COLD START AND WARM UP

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Cold start and warm up phase of petrol engine is, as a rule, the phase of critical effectivity. It would be ideal, with respect to effectivity, to reduce this phase to zero. From practical point of view, this is not possible. All what could be done is finding some ways for effectivity increase during that phase. In this paper special attention is devoted to: to effectivity idea over defined functions (criterion, work ability, effectivity, functional applicability, operational readiness and reliability); defining cold start and warm up algorithms, their states analysis and future prognosis; effectivity increase by:
engine preheating; catalyst light-of temperature reducing over physico-chemical characteristics modifications, local and global control of all engines functions, from start to the normal operating temperature, using mechatronical and mechathronex control systems.

Key Words: effectivity, petrol engines, cold start and warm up, algorithm, mechatronical and mechathronex control systems

EFEKTIVNOST BENZINSKIH MOTORA ZA VREME HLADNOG STARTA I ZAGREVANJA

Faza hladnog starta i zagrevanja motora je, po pravilu, faza kritične efektivnosti. Bilo bi idealno, sa aspekta efektivnosti, ovu fazu redukovati na nulu. Sa praktične tačke gledista, to nije moguće. Sve što bi se moglo uciniti je nalaženje načina za povećanje efektivnosti u toj fazi. U radu je posebna pažnja posvećena pojmu efektivnosti preko definisanih funkcija (kriterijuma, radne sposobnosti, efektivnosti, funkcionalne podobnosti, operativne gotovosti i pouzdanosti); definisanju algoritma hladnog starta i zagrevanja, analizi njihovih stanja i budućih prognoza; povećanju efektivnosti pomoću predgrevanja motora, pomoću redukovanja startnih temperatura katalizatora putem modifikacije fizičko-hemijskih karakteristika, kao i pomoću lokalnog i globalnog upravljanja funkcijama motora, od hladnog starta do normalnih radnih ternperatura, mehatroničkih i mehatroneks sistema upravljanja.

Ključne reči: efektivnost, benzinski motori, hladan start i zagrevanje, algoritam, mehatronički i mehatroneks sistemi.