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APPLICATION OF HYDROGEN AS ALTERNATIVE FUEL FOR PROPULSION SYSTEMS IN CITY BUSES – OVERVIEW -

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ABSTRACT: Fuel can be dangerous if handled improperly. Gasoline and diesel are potentially dangerous fuels, but over time we are learned to use them safely. The same is true with liquefied petroleum gas and natural gas. The hydrogen is suitable as a fuel for vehicles powered with both, internal combustion engines or indirectly for electric engines inside of fuel cell propulsion systems, too.

The problems associated with the production and storage of hydrogen currently limits the application of pure hydrogen as engine fuel in vehicles. This paper represents our designing proposition of a low-floor city bus for hydrogen power.

For application inside of low-floor city buses, hydrogen cylinders have to be installed on the roof for reasons of space. In addition, regarding to the lack of available information, the paper demonstrates an overview about safety regulations for vehicles with regard to the installation of specific components in hydrogen fuel line.

KEY WORDS: Hydrogen buses, Safe vehicle, Emission, City transport

PRIMENA VODONIKA KAO ALTERNATIVNOG GORIVA POGONSKIH SISTEMA GRADSKIH AUTOBUSA – PREGLED -

REZIME: Gorivo može biti opasno ako se njime rukuje nepravilno. Benzin i dizel su potencijalno opasna goriva, ali smo vremenom naučili da ih bezbedno koristimo. Slično važi i za tečni naftni gas i prirodni gas. Vodonik je dobro gorivo za vozila, bilo da se radi o direktnoj primeni u motoru sa unutrašnjim sagorevanjem ili indirektno za napajanje elektro motore posredstvom gorivih ćelija i električnog napona.

Problemi u vezi proizvodnje i skladištenja vodonika trenutno limitiraju njegovu primenu kao gorivo u motornim vozilima. U okviru rada je prikazan predlog koncepcije niskopodnog gradskog autobusa sa pogonom na vodonik.

U skladu sa raspoloživim prostorom, rezervoari za skladištenje vodonika se obično ugrađuju na krovu gradskog niskopodnog autobusa. Dodatno, u skladu sa nedostatkom raspoloživih informacija, u radu je prikazan pregled propisa u vezi bezbednosti ugradnje specifičnih delova instalacije za snabdevanje vodonikom.

KLJUČNE REČI: Autobusi na vodonik, bezbedno vozilo, Emisija, gradski saobraćaj

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