POWER DISTRIBUTION PERFORMANCE ANALYSIS OF HYBRID MOTORCYCLE

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ABSTRACT

THE POWER MATCHING CONDITION IN THE INTERNAL COMBUSTION ENGINE, MOTOR AND GENERATOR IS AN IMPORTANT INDEX OF THE OVERALL EFFICIENCY IN HYBRID ELECTRIC VEHICLE SYSTEM. THE MAIN TOPIC OF THIS RESEARCH IS TO STUDY THE POWER DISTRIBUTION IN A PARALLEL HYBRID ELECTRIC SYSTEM AND THE INFLUENCE OF THE EXCITATION CURRENT OF A GENERATION. THE CONCEPT OF PARALLEL HYBRID ELECTRIC SYSTEM DEVELOPED BY TOYOTA AUTOMOBILE COMPANY IS USED IN THIS RESEARCH. A TEST BENCH COMPOSED OF AN ENGINE, MOTOR AND GENERATOR IS SET UP FOR POWER MEASURING EXPERIMENTS IN THIS RESEARCH. ALL THE EXPERIMENTS ARE CONTROLLED BY THE ELECTRIC CONTROL UNIT, I.E. ENGINE IS CONTROLED IN A SPECIFIC OPERATION RANGE OF OPTIMUM FUEL ECONOMY, GENERATOR IS CONTROLLED TO A SPECIFIC SPEED, ETC. BY USING THE ELE -CTRIC CONTROL UNITS, IT IS EASY FOR US TO ADJUST THE POWER DISTRIBUTION AMONG THE THREE MAJOR POWER COMPONENTS OF THE ENGINE, MOTOR AND GENERATOR.

Keywords : PARALLEL HYBRID ELECTRIC SYSTEM, ENGINE OPTIMUM FUEL ECONOMY, EXCITATION CURRENT OF A GENERATOR

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