AN EXPERIMENTAL STUDY ON PERFORMANCE OF DIESEL ENGINE OPERATING WITH WASTE TIRE AND WASTE PLASTIC DERIVED FUEL

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MASTER OF AUTOMOTIVE ENGINEERING

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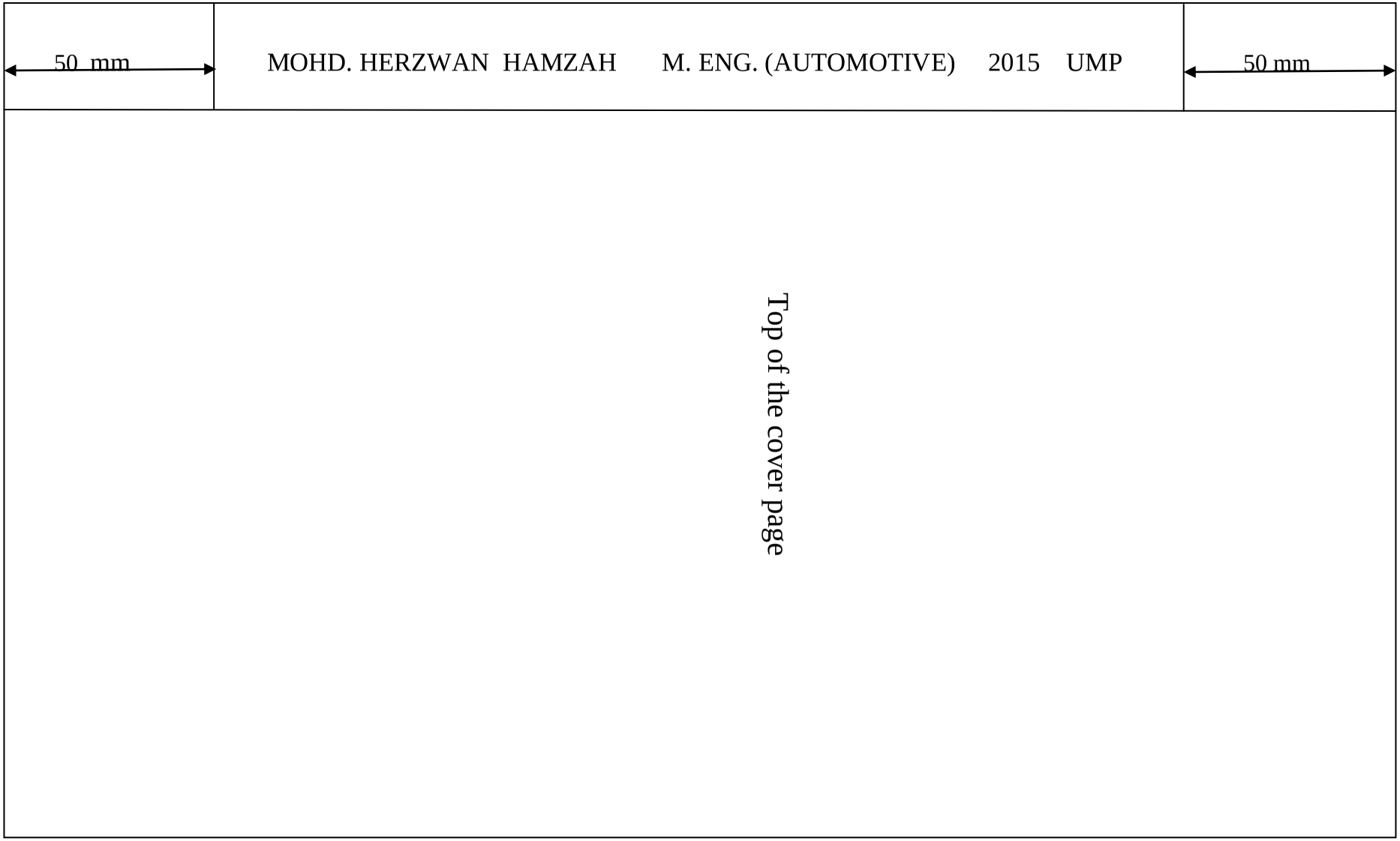
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Thesis submitted in fulfilment of the requirements
for the award of the degree of
Master of Engineering in Automotive Engineering

Faculty of Mechanical Engineering
UNIVERSITI MALAYSIA PAHANG

APRIL 2015

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LIST OF ABBREVIATONS

AAM	Malaysia Automotive Association
ASTM	American Standard of Testing Methods
BTE	Brake thermal efficiency
CI	Compression ignition
CN	Cetane number
CNC	Computer numerical control
CO	Carbon monoxide
CO_2	Carbon dioxide
DAQ	Data acquisition system
EGR	Exhaust gas recirculation
HC	Hydrocarbon
IMEP	Indicated mean effective pressure
NO_x	Nitrogen oxides
PDF	Plastic derived fuel
PM	Particulate matter
SAE	Society of Automotive Engineers
SI	Spark ignition
SO_2	Sulphur dioxide
TDC	Top dead centre
TDF	Tire derived fuel

LIST OF SYMBOLS

C_d	0.6
d_{pump}	Pump displacement
d	orifice diameter
D	Air density in lb/ft^3
h	100 mm H_2O
k	2 (four stroke engine)
n	Maximum engine speed
N_c	Number of cylinder
n_{min}	Minimum engine speed that tested
p	Pressure difference
P_a	1 bar
P_B	Barometric pressure in inches of mercury
$P_{Hydraulic}$	Hydraulic horsepower
P_v	Velocity pressure in inches of water
Q	Flow rate
T_{pump}	Torque absorbed by the pump from the engine flywheel
T_a	293 K (20°C)
V	Air flow rate
V_b	Minimum size of inbox
V_s	Swept volume
η_v	0.8
ω	Engine speed