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EGR
NO
cc () EGR NO
EGR
EGR
bsfc NO CO UHC
rpm full-load
EGR / /
NO EGR:

Experimental Investigation of Clean EGR on Performance and Pollutant in Spark Ignition Engine

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Abstract

Air pollution is one of the complexity and important problems of populous and industrial cities in the world. Physical state of air-fuel mixture at inflammation instant is one of the main factors which can strongly influence on the performance as well as on the engine pollutants. Cold EGR technique and its entrance location into air manifold that have been recently proposed for controlling NO pollutant, can be considered as an important parameter to improve the characteristic of the physic of mixture. Since, in order to, elimination the EGR particles, optimum utilization of different species of EGR fluid and increasing its efficiency for reducing the engine pollutants, especially, NO pollutants, the clean EGR (refined) was studied on carbureted 1600cc paykan engine made by Iran Khodro Company. Experimental data, based on 18 modes of European standard showed that when refined EGR is added to air-fuel mixture from two different locations, it is caused to prevent from closing the EGR circuit pipes, and also compared with base engine, the reduction rates of UHC, CO, NO and bsfc were 5.9, 12.6, 59 and 8.8 percent respectively. In addition, reduction of power in the same condition and quantity of EGR, based on 70020 DIN standard, under full-load and 2500 rpm conditions was 2.2 percent.

Key words: Clean EGR, NO reduction, Engine performance.

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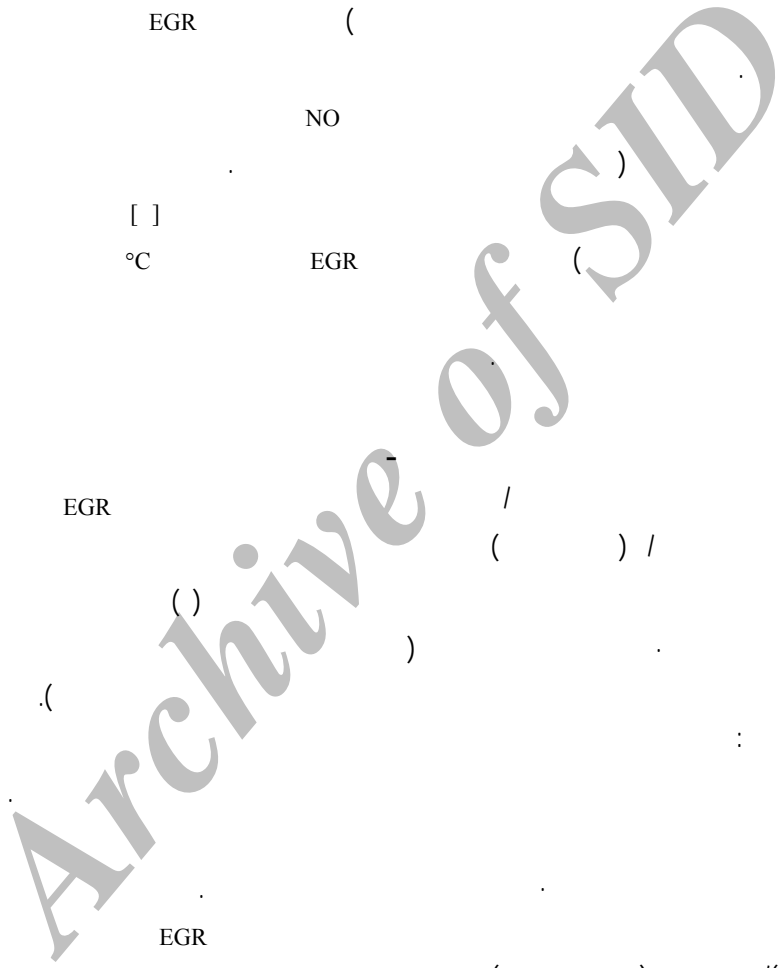
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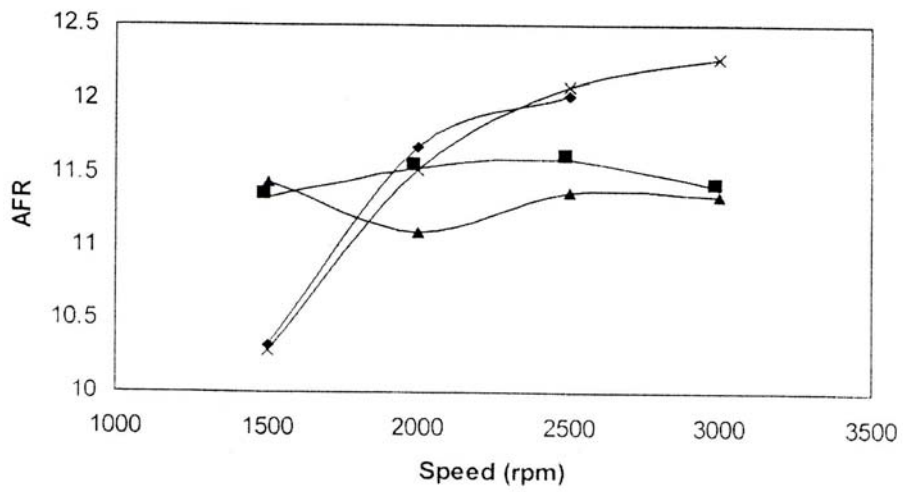
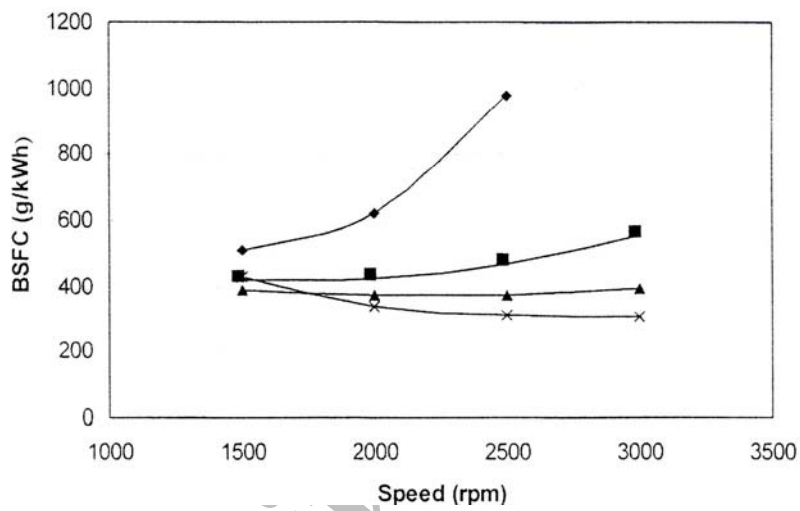
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 bsfc g/kW.h



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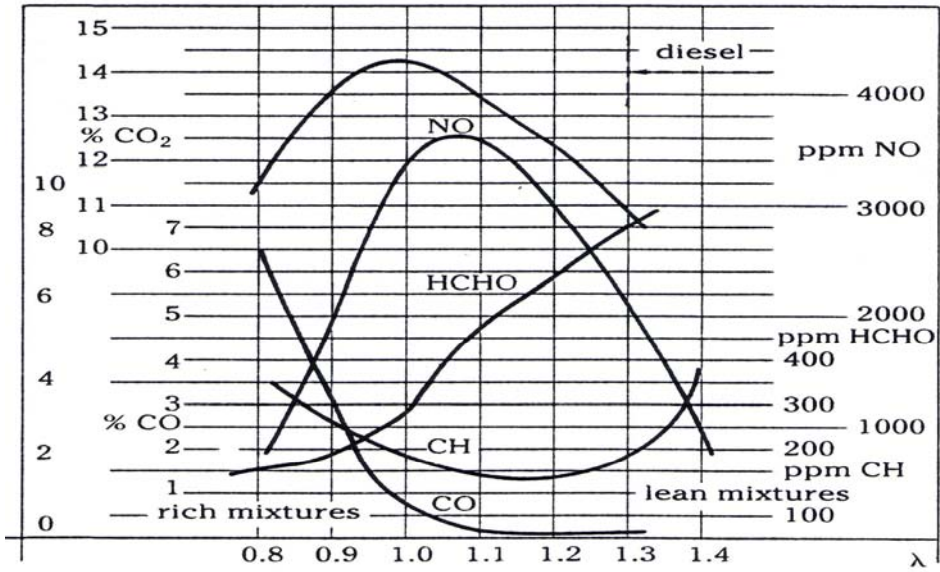
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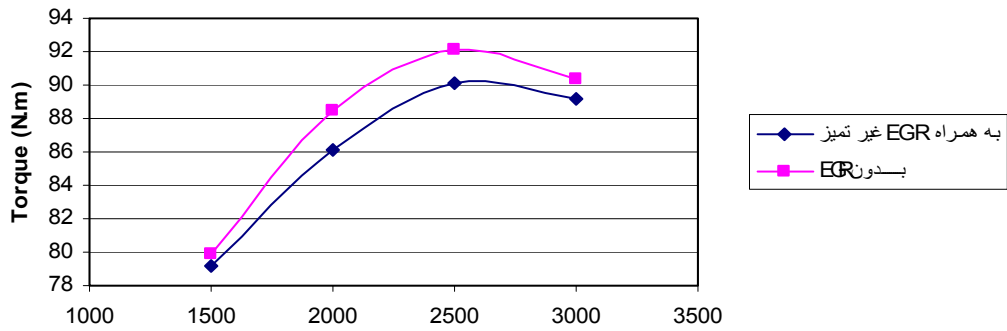
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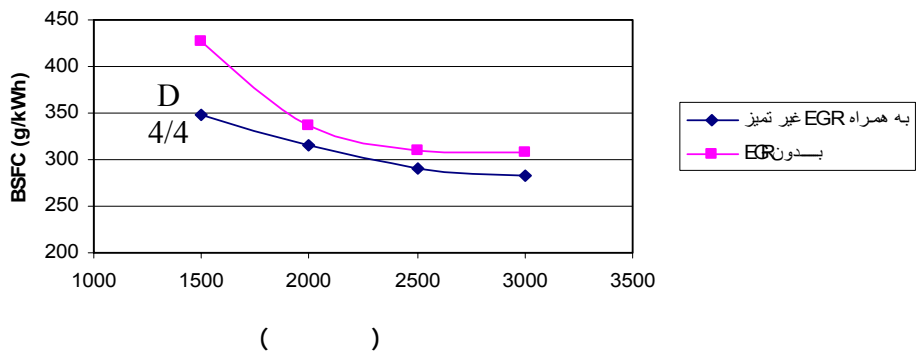
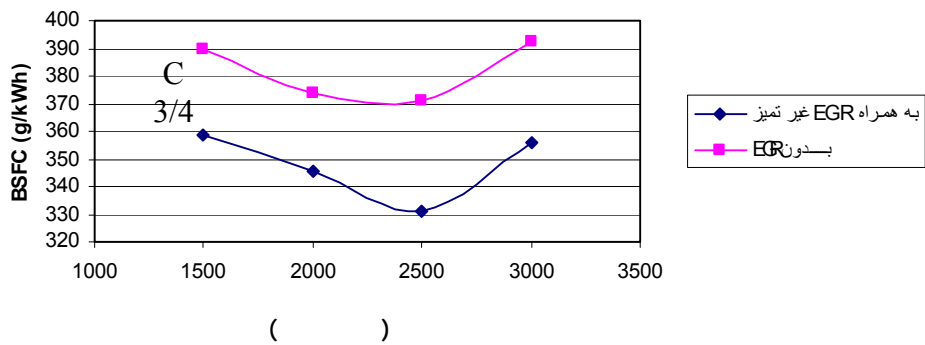
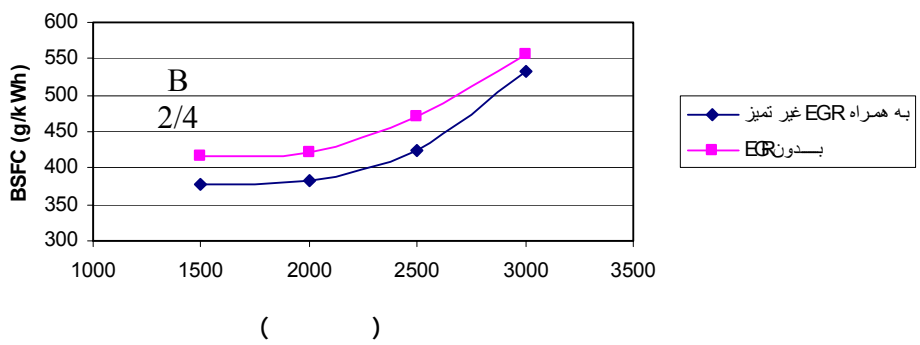
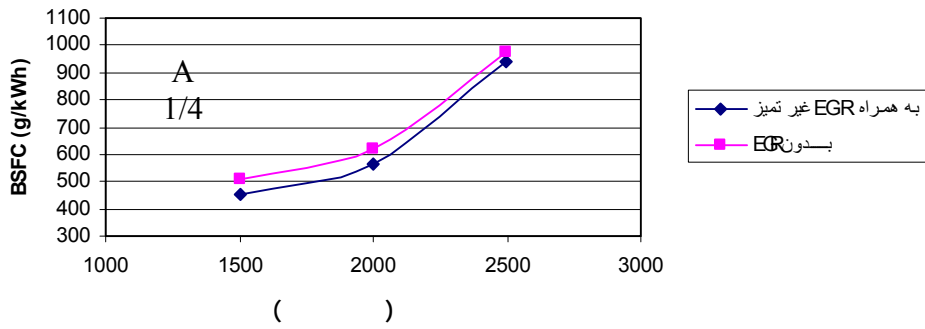
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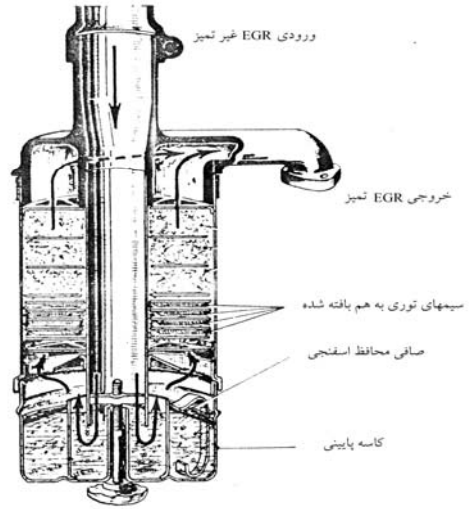


bsfc

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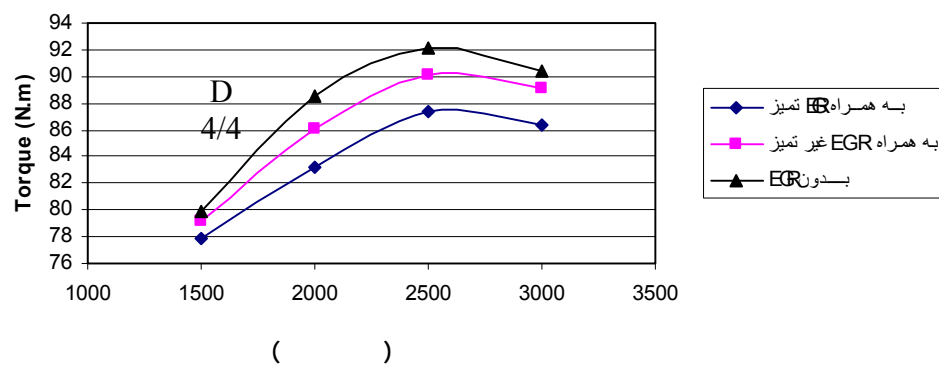
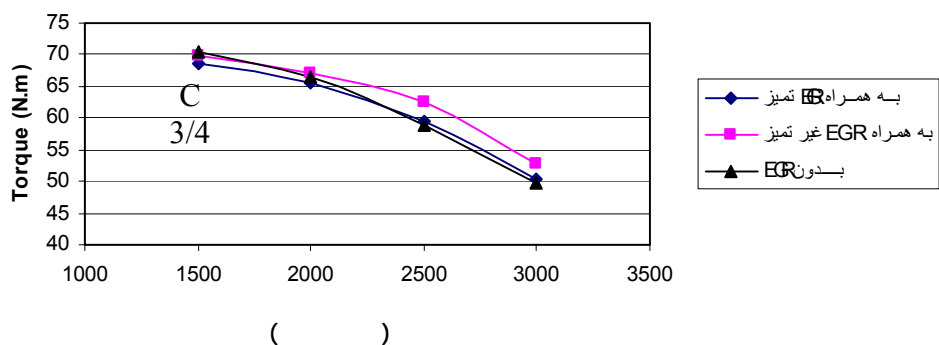
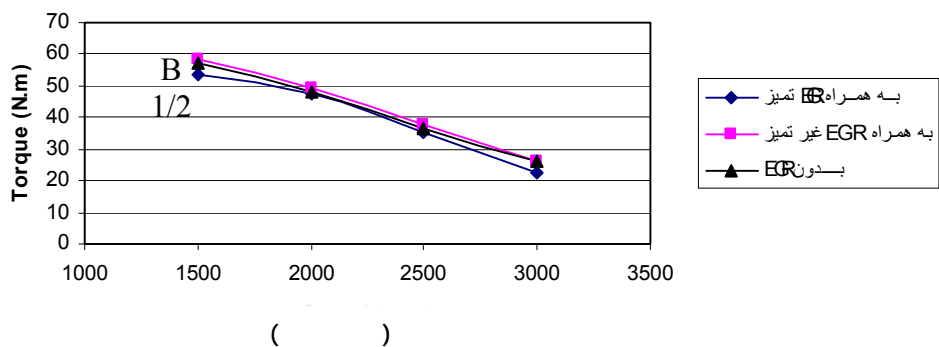
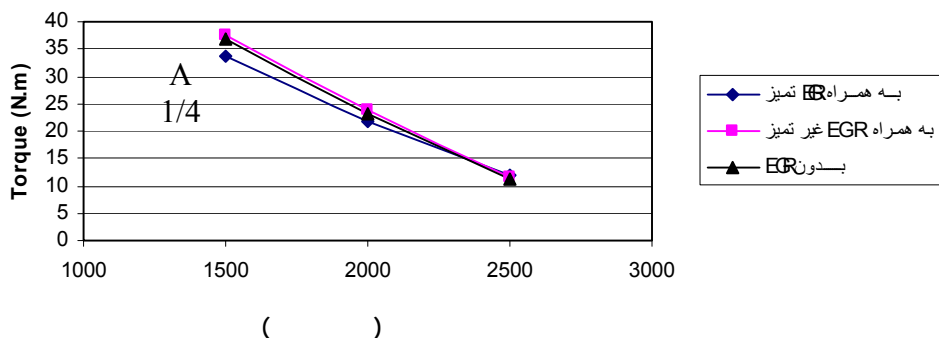
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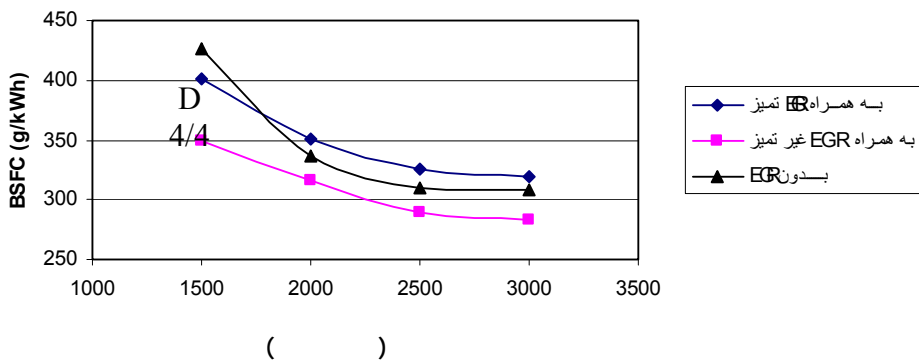
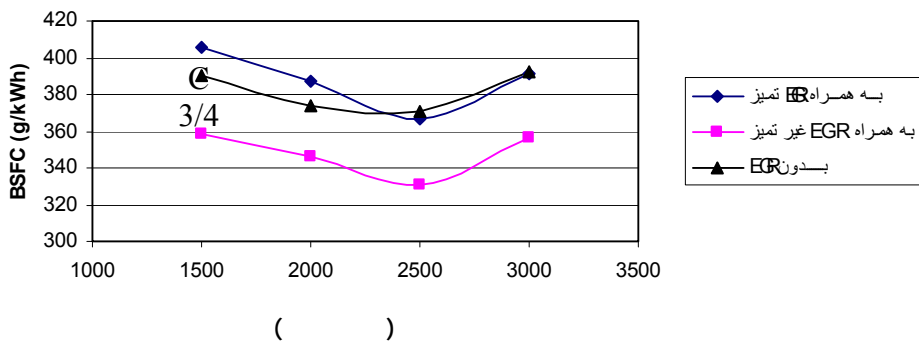
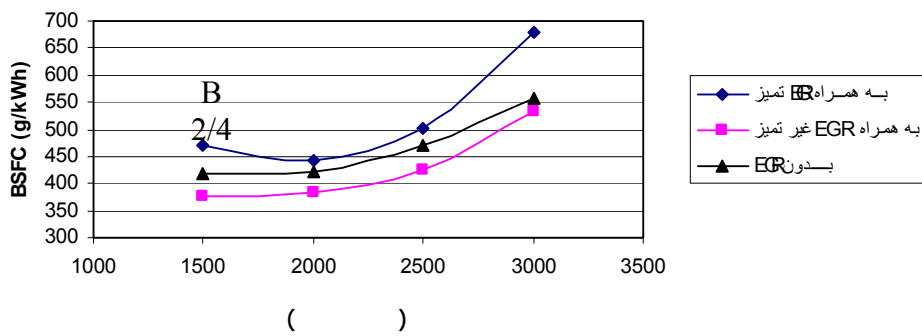
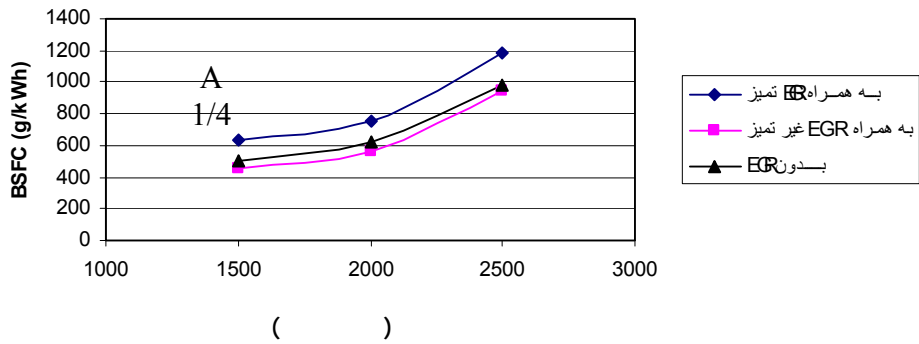
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g/kW.h			bsfc
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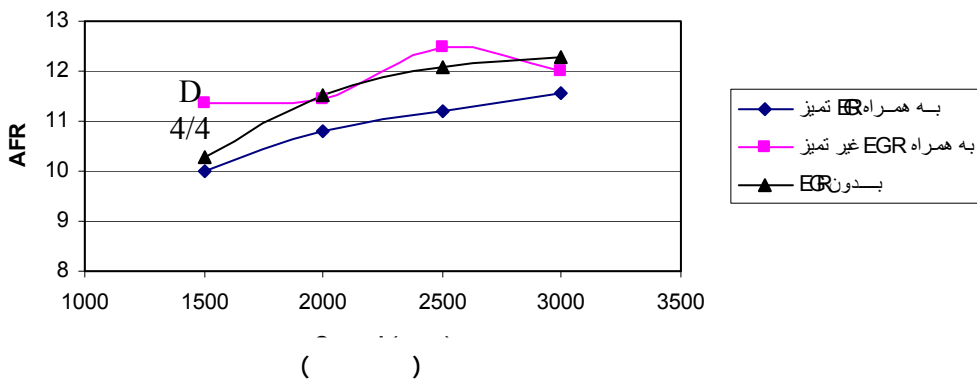
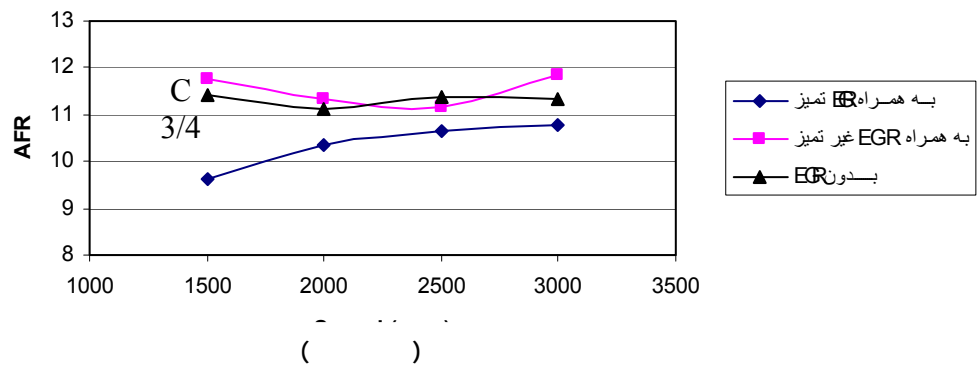
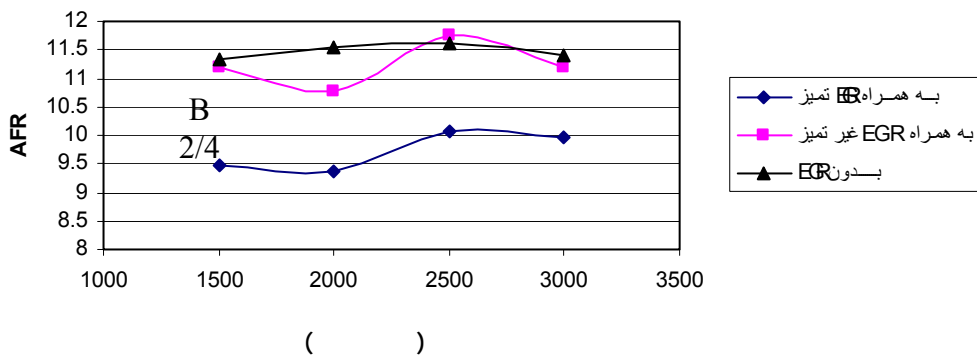
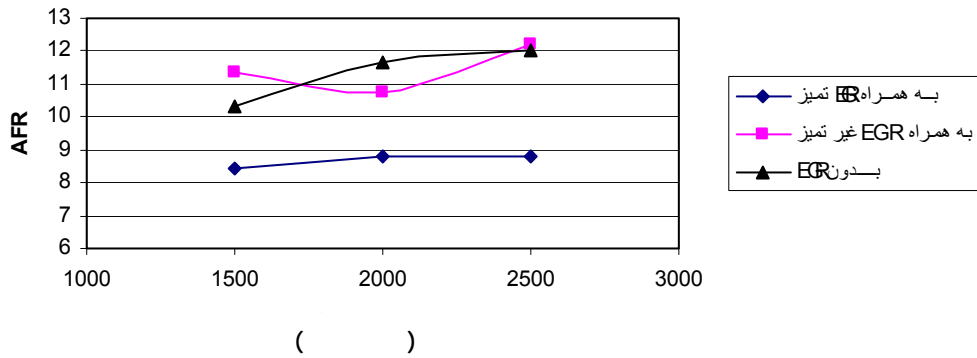


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/ mm	-	cc
/ mm	-	
cc	-	
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rpm	-	
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DA- Go power		
VM Signal CLD		
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