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Hydrogen as fuel in combustion engines – Hydrogen Engine Technology

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Fundamentals of hydrogen engines

Advantages of hydrogen as engine fuel, 1a

Advantages of hydrogen as engine fuel, 1b

Advantages of hydrogen as engine fuel, 2

Drawbacks of hydrogen as engine fuel, 1

Drawbacks of hydrogen as engine fuel, 2

Drawbacks of hydrogen as engine fuel, 3

Drawbacks of hydrogen as engine fuel, 4

Summary: advantages and drawbacks

Hydrogen engine concepts

Hydrogen engine concepts

CI hydrogen engines

CI hydrogen engines

Recent project

CI hydrogen engines

CI hydrogen engines

CI hydrogen engines

CI hydrogen engines

CI hydrogen engines

SI hydrogen engines

Delivery methods of hydrogen in SI engines

SI hydrogen engines

Port fuel injection (PFI)

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SI hydrogen engines

Direct injection (DI)

SI hydrogen engines

DI injector results

SI hydrogen engines

Hybrid mixture formation, an example

SI hydrogen engines

SI hydrogen engines

SI hydrogen engines

Hydrogen engine concepts

Summary of SI hydrogen engines

Summary of CI hydrogen engines

Supercharging, exhaust gas recirculation, some results

Supercharging a hydrogen engine

Exhaust gas recirculation (EGR)

Exhaust gas recirculation (EGR)

Exhaust gas recirculation

Exhaust-free engine concept for H₂, 1/3

Exhaust-free engine concept for hydrogen, 2/3

Exhaust-free engine concept for hydrogen, 3/3

Anticipated efficiencies of H₂ engines

Anticipated efficiencies of H₂ engines

Measured efficiency of an H₂ engine

SI H₂ engine with hybrid mixture formation (HMF), 1/3

SI H₂ engine with hybrid mixture formation (HMF), 2/3

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SI H2 engine with hybrid mixture formation (HMF), 3/3

Heavy-duty DI H2 engine

About some engine components of hydrogen engines + references

Injectors of H2 engines

Spark plugs of H2 engines

Structural considerations of H2 engines, 1/2

Structural considerations of H2 engines, 2/2

Materials of H2 engines

Structural solutions

Combined heat and power plant with H2 engines

Field tests of H2-driven trucks

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