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Welcome review to the book: "Electric and Hybrid Vehicles"
CRC Press, Boca Raton, Florida, 2003,
by Iqbal Husain.

Divided in 10 Chapters , this 270 pp. book represents a systems-level perspective on electric and hybrid vehicles technical aspects, basic mathematical relationships and fundamental design guidelines.

Electrical and hybrid vehicles represents, after Robotics, an even more important multidisciplinary field where electro-mechanics, electro-chemistry, power electronics and digital control meet to reduce fuel consumption and air pollution produced by on-road vehicles.

It is a strong challenge to Academia and Industry, now that at least two top car manufacturers have launched their hybrid vehicles on the world markets recently.
Electric vehicles have been in limited use, for town services, since the beginning of the 20^{th} centuries but the very recent progress in power electronics and batteries and the more demanding anti-pollution legislature seems to open the way to the wide-spreading of EHV, at least for in-town applications. So the subject of the book is very timely.

The author has chosen to write a book on the basics of EHV, directed mainly to Engineering Students. Then, the author proceeds with remarkable consistence to detail this goal over the 10 Chapters of the book. The accent falls on EVs while hybrids are dedicated Chapter 10. This is partly justified by the fact that basically same electric energy conversion problems and solutions, though with different controls and power levels, occur in both EVs and in Hybrids.

This new technology now apparently ready to become a worldwide industry requires the enthusiasm, creativity and dedication of the future engineers and thus the author targeted main audience: the students in engineering, is well placed.

The book starts with a short history of EHV and with their advantages in fuel consumption and pollution reduction. (Chapter 1) and goes on to present the vehicle mechanics in order to get the energy conversion specifications for EHV (Chapter 2).

Electrochemical batteries are presented in remarkable detail in Chapter 3 with their steady state characteristics and dynamic models.

They are crucial for EHV's energy conversion process as the main energy storage element. Fuels cells, super and ultra capacitors, and flywheels , as alternative energy systems are dedicated Chapter 4.

As EHV need electric propulsion the main brushless electric machines, adequate for the scope, with their advanced models for transients and control are described in Chapter 5.

PM and switched reluctance machines are treated separately in Chapter 6, a reflection of the author's own contributions to the field. The Power Electronics required to control the electrical machines for motoring and generating on board of EHV is presented in Chapter 7.

AC and switched reluctance motor drives control methods for EHV are described in Chapter 8. A special attention is given to SRM where the author's contributions were quite visible.. Electric vehicle drivetrain so essential for electric machine sizing is treated in Chapter 9.

Hybrid-electric vehicles are classified in parallel and series ones and then described in some detail in Chapter 10 with special attention to internal combustion engine modeling and the design of the vehicle electric power train contribution.

The book is concise and clear, its mathematics are kept to a necessary minimum, but fully representative for the scope and the contents is well balanced in general.

Though it has some monograph attributes the book represents mainly a NEW senior or early graduate course in Engineering at the intersection of electrical, mechanical and chemical engineering.

After Nasar and Unnewher's outstanding pioneering book "Electric Vehicle Technology", John Wiley, 1982, Prof. Iqbail Husain' s new book " Electric and Hybrid Vehicles", CRC Press, 2003 comes as a new and timely contribution to the field, now dedicated mainly to engineering students, expected to contribute heavily in the near future to a field that has reached recently notable markets with the new hybrids, in a more and more environmentally sensitive world.

We warmly recommend it to Academia-as a new course- to engineering students and to R&D electrical and mechanical engineers as a solid introduction to EHV.

Sincerely, Ion Boldea.