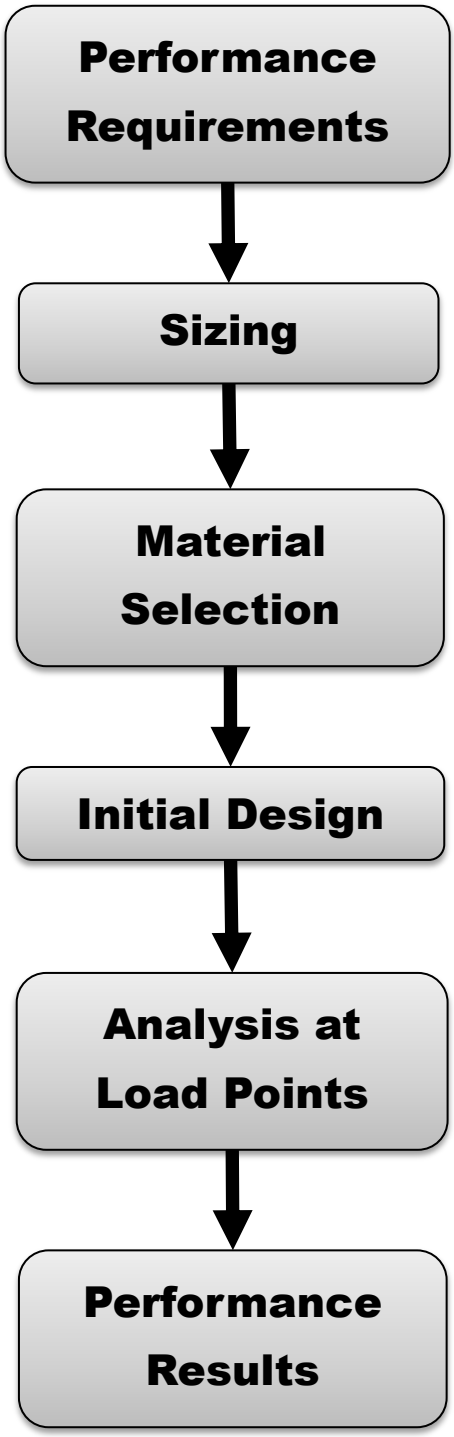
DESIGNING YOUR BLDC MOTOR WORKSHOP
HYATT REGENCY IN GARDEN GROVE, CA
MAY 9-10, 2011

This two day workshop will cover all the ins and outs of brushless dc machines, particularly surface mounted and interior permanent magnet (IPM) types.



What makes this workshop so unique?

1. Attendees will be encouraged to share the practical problems they face in their work environment to better understand how to apply the theory to real problems.

2. Jim Hendershot has over 50 years of experience in motor design and manufacturing. He has written several books on the topic and has been honoured by associations such as IEEE and SMMA.

3. Combining theory and design procedure discussions with hands-on sessions using a motor design software package to perform detailed analysis.

Motor design strategy based on requirements

Discussion of topics will include initial sizing, material selection, dimensioning, load point analysis and design iterations. Each topic will include extensive discussion on manufacturing and other constraint-based design of electric machines as typically provided by a specification sheet.

Physical effects such as cooling requirements, aging and optimum performance will also be covered.

Attendees will receive a printed copy of the workshop material presented and a trial of the motor design software tool to use during the workshop's hands-on session.

Registration fees also include a parking voucher, refreshments and lunch each day.

Theory and Examples - May 9, 2011

Introduction to Brushless DC Machines

- Motor types and configurations
- Principles of operation (torque production, analytic expressions for torque calculations)
- Drive types (sinusoidal/six-step drives)

General Design Strategy of Brushless DC Machines

- Performance requirements
- Initial sizing
- Selection of machine configuration, pole/slot combination
- Material selection (lamination and permanent magnets)
- Initial dimensioning of rotor and stator
- Winding design (balanced winding configurations, winding types)
- Design performance

Surface Mounted BLDC Machine Example

- Performance specification.
- Initial design choices (interior/exterior, number of poles, number of slots) based on requirements.
- Initial rotor and stator dimensioning (setting initial sizes, skewing, back emf, cogging torque)
- Lamination and permanent magnet material choices and their selection
- Comparison between different materials, core loss calculation based on Steinmetz equation
- Winding design; winding type selection (concentric, lap winding)
- Choice of balanced windings, winding factors, winding harmonics, discussion of machine back emf
- Design analysis; power output, torque-speed characteristics, efficiency, core loss and other important machine parameters

Interior Permanent Magnet Machine

- Practical design example of an IPM covering similar topics to that of a surface mounted brushless dc machine
- Special attention will be paid on the difference between designing a surface mounted machine and an IPM
- The IPM example considered will be for a traction device application

Practical Experience - May 10, 2011

The second day of this workshop will apply the topics covered in-class thus far in a hands-on session which attendees will practice the motor design strategy. The attendees will be able to specify their design needs and use modern motor design software to carry out the actual design. Extensive discussions and question/answer sessions on each design step.

EVENT LOCATION

Hyatt Regency Orange County
11999 Harbor Blvd.,
Garden Grove, California, USA 92840
Tel: +1 714 750 1234
Fax: +1 714 740 0465
Maps & Directions

DATES and TIME

Monday, May 9th, 2011 & Tuesday, May 10th, 2011
8:00 AM to 5:00PM
Registration and Continental Breakfast begins at 7:30AM

COST

$895 USD until April 25th, 2011
$995 USD after

PAYMENT & CANCELLATION POLICY

You can complete and fax back the attached form or register online at
https://www.jh-workshop.com/register/

If you need to cancel your registration, we must receive written notice. Our policy is as follows:
On or Before April 25, 2011 – **Full refund**
Between April 26th and May 7th, 2011 – **50% refund**
After May 7th, 2011 – sorry**, no refund**

For questions, contact Chad Ghalamzan:
info@jh-workshop.com
514 849 8752 x 300

Registration Form

DISCOUNT DEADLINE APRIL 25, 2011

You can also registration online at https://www.jh-workshop.com/register/

Please select from the following

BRUSHLESS DC MACHINE **MAY 9 & 10, 2011** **Hyatt Regency Orange County**

This two day workshop will cover all the ins and outs of brushless dc machines, particularly surface mounted and interior permanent magnet (IPM) types.

Advance Discount/Regular			Quantity	=	Price
$895	$995	X	_____		_____

INDUCTION MACHINE **MAY 11 & 12, 2011** **Hyatt Regency Orange County**

This two day workshop will cover all the ins and outs of induction dc machines, including squirrel cage and wound field types.

Advance Discount/Regular			Quantity	=	Price
$895	$995	X	_____		_____

BRUSLESS DC MACHINE & INDUCTION MACHINE

This includes a 4 day workshop that will cover two days on BLDC and two days on IM.

Advance Discount/Regular			Quantity	=	Price
$1695	$1795	X	_____		_____

TOTAL _____

First Attendee or Contact Person Information

Name: _____ Company: _____

Address: _____

City: _____ State:_____ ZIP: _____

Phone: _____ Email: _____

Credit Card Information

☐ MasterCard ☐ Visa

Cardholder Name: _____

Billing Address: (if different than above)

_____

City: _____ State:_____ ZIP :_____

Account Number: _____

Security Code: _____ Expiry (mm/yy):_____

Signature: _____ Date: _____

Please complete this form and fax to (514) 849-4239
Your registration confirmation will be sent via e-mail upon receipt of this form.
If you have any questions: info@jh-workshop.com