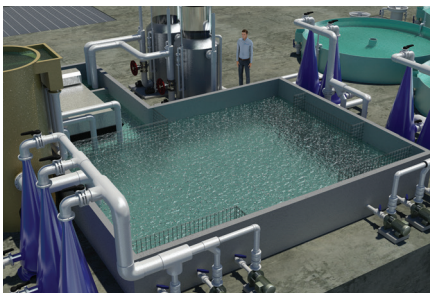


RECIRCULATING AQUACULTURE SYSTEMS (RAS) TECHNOLOGY WORKSHOP

Summer 2014 Dates: July 31–August 1, Apopka, FL



Topics that will be covered during this 2-day workshop:

AN INTRODUCTION TO RECIRCULATING SYSTEMS

- Defining recirculating systems
- RAS compared to other production options
- Reasons to use recirculating technology

CRITICAL CONSIDERATIONS BEFORE DESIGNING RECIRCULATING SYSTEMS

- Impact of feed on growth, metabolism and water quality
- Critical water quality parameters
- Tank hydraulics
- Solids waste generation
- Dissolved nutrient generation
- Oxygen uptake
- Disease control

COMPONENT OPTIONS FOR USE IN RECIRCULATING PRODUCTION SYSTEMS

- Solids removal
- Nutrient removal
- Dissolved gas addition and removal
- Heating and cooling of air and water

DEVELOPING AN APPROPRIATE DESIGN FOR YOUR AQUACULTURE APPLICATION

- An introduction to the mass balance design approach
- Examples from around the USA and Europe

THE MANAGEMENT OF RECIRCULATING SYSTEMS

- Monitoring and control
- Daily operations
- Harvesting and fish transfer methods
- Emergency systems and procedures

WASTE MANAGEMENT ISSUES

- Waste Generation
- Waste Treatment Options
- Waste Disposal

ECONOMIC CONSIDERATIONS IN CREATING, EVALUATING AND OPERATING RECIRCULATING SYSTEMS

- Capital investment costs
- Variable costs
- Fixed costs



AQUATIC ECO-SYSTEMS™

For more information about educational courses offered by Pentair Aquatic Eco-Systems, please email PAES.General@Pentair.com.

Web: PentairAES.com

Email: PAES.General@Pentair.com

2395 Apopka Blvd., Apopka, FL 32703

RECIRCULATING AQUACULTURE SYSTEMS (RAS) TECHNOLOGY WORKSHOP

ABOUT THIS WORKSHOP

Aquaculture, as a business, seems to be able to capture the imagination of a wide variety of individuals worldwide. Recirculating aquaculture technology (systems that recondition and re-use water) is the latest sector in aquaculture to have attracted attention and considerable venture capital. This workshop is designed for a broad audience. We will seek to provide non-biased, research-based information to those that are interested in, or those using recirculating aquaculture fish production systems. The information presented comes either from the first-hand research results and experiences of the presenters or those of collaborators or colleagues around the world. Workshop registration includes a technical workbook, memory stick with applicable resource materials, break refreshments, and lunch each day.

ABOUT THE PRESENTERS



Dr. Tom Losordo is the Principal Scientist and Chief Engineer for Pentair Aquatic Eco-Systems. Dr. Losordo has earned a Bachelor degree in Biology and a Masters degree and Ph.D. in Agricultural Engineering. Involved in aquaculture for 40 years, Dr. Losordo has extensive experience in the research, development, design, and implementation of recirculating aquaculture systems worldwide. Formerly with the Department of Biological and Agricultural Engineering at North Carolina State University, Dr. Losordo headed the program of applied research and demonstration known as the North Carolina Fish Barn. Dr. Losordo also provided aquacultural engineering support to citizens of North Carolina and beyond through the North Carolina Cooperative Extension Service.



Mr. Dennis DeLong is Manager of Customer Advocacy with Pentair Aquatic Eco-Systems. Mr. DeLong has earned a Bachelor degree in Biology and a Master of Science degree in Management. He has been involved in both commercial aquaculture activities and research and development for 35 years. Prior to joining Pentair in July 2011, Mr. DeLong managed the research and demonstration activities within the North Carolina State University Fish Barn program. He provided extension assistance in aquaculture to citizens and agri-businesses in North Carolina for 20 years, including the design, construction, and operation of RAS facilities.

ACCOMMODATIONS

Hampton Inn Apopka
321 S. Lake Cortez Drive
Apopka, FL USA 32703
407 880-7861

Holiday Inn Express
238 South Line Drive
Apopka, FL USA 32703
407 880-7868

To receive the workshop rate, please request 'Pentair Corporate Rate' when booking your accommodations.

WHEN

Thursday, July 31–Friday, August 1, 2014
8AM–5PM (Thursday and Friday)

WHERE

Pentair Aquatic Eco-Systems
Suite 200, Main Training Room
2395 Apopka Blvd.
Apopka, FL USA 32703

COST

\$350—Includes morning and afternoon breaks, 2 lunches and course materials. A workshop notebook containing a copy of the presentation slides will be provided for each participant. A USB memory drive will be provided with a number of spreadsheets and .pdf file publications. Ample time will be provided for questions during the workshop. Limited student registrations are available for \$175 with valid student ID.

RESERVATIONS

Reservations are essential and only accepted with payment in full. Participation is limited to the first 36 paid registrants. Further details and registration available at PentairAES.com. Follow the links or search for product 'RASTraining1' (regular) or 'RASTraining2' (student).

Register online at PentairAES.com.



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PENTAIR AQUATIC ECO-SYSTEMS RECIRCULATING AQUACULTURE SYSTEMS (RAS) TECHNOLOGY WORKSHOP – SUMMER 2014 COURSE REGISTRATION FORM

Course Title: Recirculating Aquaculture Technology Workshop – Summer 2014

Course Dates: July 31, 2014 – August 1, 2014

Date Registered: _____ / _____ / _____

Course Rate: \$ _____

Course Rates: Person: \$350 • Student: \$175

Name: _____
Last First MI

Company: _____ **Job Title:** _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **Cell/Office:** _____

Email: _____ **Fax:** _____

Dietary Considerations: _____

Special Assistance Needed: _____

Method of Payment (select one): _____ **Credit Card** _____ **Check Payable to: Pentair Aquatic Eco-Systems** (\$35 fee on returned checks)

Credit Card Type: _____ **VISA** _____ **American Express** _____ **MasterCard**

Name as it appears on card: _____

Card #: _____ **Expiration Date:** _____ / _____

Authorized Signature: _____

Cancellation Policy: Registered attendees who cancel at least 30 days prior to the workshop will receive a full refund. Cancellations made 29 to 5 days before the start date result in a 75% refund. NO refund will be granted for cancellations made 4 to 0 days before the start date.

By signing below and registering to attend this workshop, I hereby agree to the terms listed on this form and I grant my explicit permission to Pentair Aquatic Eco-Systems ("PAES") and their affiliated companies, to use my name, my comments about the workshop (written and spoken) and my photo/video likeness in any future marketing and advertising materials; as well as in any other legal means. I hereby grant full copyright of photographs and other written materials from the workshop/course to Pentair Aquatic Eco-Systems and their affiliated companies, jointly with the right to reproduce said photos and materials fully or in part. I understand that commercial use of any written materials, videos or photos provided by PAES are strictly prohibited unless written authorization is provided by PAES.

Signature: _____ **Date:** _____



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If paying by credit card, you may fax your registration form to our secure line: 407-886-5306 or return by mail (see below).

If paying by check, please return your payment and completed registration form to:

Recirculating Aquaculture Technology
Workshop Registration
c/o Pentair Aquatic Eco-Systems
2395 Apopka Blvd., Apopka, FL 32703