

# Intensive Quenching Workshop

April 24, 2013; Cleveland, Ohio

*Hosted, organized and presented by IQ Technologies, Inc.*

This one-day workshop is designed to provide you with an overview of IntensiQuench® processes and production IQ equipment, examine the data from actual case studies, and give you a forum to discuss the use of intensive quenching for your products.

The workshop will help answer these questions for you:

- Can a quench process provide both high strength and high ductility at the same time?
- How does intensive quenching equipment differ from traditional water, oil, salt or gas quenching systems?
- How can *my heat-treated products* benefit from intensive water quenching and save costs too?

Who should attend this workshop?

- Experienced heat treaters and metallurgists who need more from the quenching process.
- Steel product design engineers working on developing greater power density parts.
- Manufacturing engineers wanting to integrate heat treating into the manufacturing cell.

The technical program includes presentations by metallurgical scientists, CFD and Finite Element modeling experts, and experienced heat treaters. Registration is now open and seating is limited.

## Intensive Quenching Workshop Agenda for April 24, 2013

**9:30am – 10:00am: Registration**

**10:00am – 10:15am: Welcome and Introduction**

**10:15am – 11:05am: Basics of Intensive Quenching**

- Basics of conventional quenching
- Basics of intensive quenching process
- Definition of IQ process
- Types of IQ processes
- Improved steel microstructure after IQ process
- Improved steel mechanical properties after IQ process
- Improved residual surface stress conditions
- Steels and parts suitable for intensive quenching
- Summary of IQ process benefits

**11:05am – 11:15am: COFFEE BREAK**

**11:15am – 11:45am: Intensive Quenching Equipment**

- Batch type IQ equipment
- Single-part processing IQ equipment
- Continuous IQ systems
- Pressurized IQ water tank
- Basic principal of designing IQ equipment

**11:45am -12:15pm: Intensive Quenching Process DANTE Computer Modeling**

- DANTE heat treatment simulation software.
- Material & Process Data for Intensive Quenching
- Applying DANTE to Intensive Quenching

**12:15pm – 1:00pm: LUNCH**

**1:00pm – 1:30pm: Intensive Quenching Fixture Design Using CFD Modeling**

- Why CFD is important to fixture design
- Overview of CFD methods
- Examples of fixture designs

**1:30pm - 2:10pm: Intensive Quenching Case Studies**

- Automotive parts
- Heavy truck components
- Tool products
- Railroad equipment components
- Bearing products
- Forklift forks
- Castings

**2:10pm - 2:30pm: Intensive Quenching Technology Commercialization**

- IQ process economics
- Major steps of IQ process introduction

**2:30pm – 2:45pm: Driving to Euclid Heat Treating for an IQ Technologies Facility Tour**

**2:45pm – 3:30pm: Intensive Quenching Facility Tour**

**CDs containing PowerPoint presentations and a Bibliography of several articles on intensive quenching will be provided to attendees.**

## **Registration and Lodging Information**

The Workshop will be held on **Wednesday, April 24, 2013** at the Hilton Garden Inn Banquet & Conference Center, 700 Beta Drive, Mayfield Village, Ohio 44143, USA, (440) 646-1777) from 9:30 AM to 3:30 PM. Transportation can be provided from the hotel to the IQ facilities for the plant tours.

A block of rooms for the evening of April 23, 2013, at reduced rates of \$139.00, is being held for attendees at the Hilton Garden Inn. To make your reservations call the Hotel directly at (440) 646-1777 and mention the **"IQ Technologies Workshop"** to receive the \$139.00 room rate.

Registration Fees:     \$250.00 for all registrations before April 1, 2013.  
                              \$295.00 for all registrations after April 1, 2013.

Registration deadline is April 15, 2013.

Registration fees are non-refundable after April 1, 2013

**ATTENDEE'S REGISTRATION FORM:**

Name(s): \_\_\_\_\_

Company or university affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

How did you hear about the Workshop? \_\_\_\_\_

Do you have any specific questions regarding Intensive Quenching you would like addressed by the faculty? If so, please state the question(s).

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Amount enclosed: No. of Attendees \_\_\_\_ X \$ \_\_\_\_\_ (fee) = \$ \_\_\_\_\_ TOTAL

Mail the Registration Form with check or money order payment to:

**IQ TECHNOLOGIES INC**  
**P.O. Box 1787**  
**Akron, OH 44309 USA**

Questions? Please contact Dr. Michael A. Aronov, CEO at (440) 542-0821 or e-mail [m.a.aronov@sbcglobal.net](mailto:m.a.aronov@sbcglobal.net)