



PARKER CENTRE



**Murdoch**  
UNIVERSITY



Minerals  
Council of  
Australia

# Professional Development Courses 2009

## Hydrometallurgy

*Supporting our industry*

*Enhancing your career*



Extractive Metallurgy, Murdoch University

# Fundamentals of Hydrometallurgy

April 20-22

## Course Program

### Day 1

9:00 Introduction to hydrometallurgy

10:30 Morning coffee

10:45 Ions in solution

12:30 Lunch

1:30 Thermodynamics of solutions

3:00 Afternoon tea

3:15 Practical exercises

**COST - \$1750 + GST**

**Registration by 1 April**

### Day 2

9:00 Redox equilibria

10:30 Morning coffee

10:45 Eh/pH diagrams I

12:30 Lunch

1:30 Eh/pH diagrams II

3:00 Afternoon tea

3:15 Practical exercises

The cost includes a comprehensive set of course notes and teas/lunches.

**Delegates are urged to participate in this course before undertaking any of the subsequent courses.**

### Day 3

9:00 Heterogeneous kinetics

10:30 Morning coffee

10:45 Electrochemical kinetics

12:30 Lunch

1:30 Mass transport

3:00 Afternoon tea

3:15 Practical exercises

Contact us for discounts on multiple attendees or courses

For further information about mineral processing and other courses and enrolment at Murdoch University, please visit our website

<http://www.cms.murdoch.edu.au/areas/extrmet/PDCourses/>

For details of the courses contact Mike Nicol  
[nicol@murdoch.edu.au](mailto:nicol@murdoch.edu.au) ☎ (08) 9360 6766

# Principles and Practice of Leaching

April 23,24

## Course Program

### Day 1

9:00 Chemical principles of leaching

10:30 Morning coffee

**COST: \$1400 + GST**

10:45 Thermodynamics of leaching

12:30 Lunch

**Registration by 1 April**

1:30 Leaching kinetics I

3:00 Afternoon tea

The cost includes a comprehensive set of course notes and teas/lunches

3:15 Practical exercises

### Day 2

9:00 Leaching kinetics II

**Prior participation in the Fundamentals of Hydrometallurgy Course will assist in deriving maximum benefit from this course.**

10:30 Morning coffee

10:45 Leaching of metals

12:30 Lunch

1:30 Leaching of oxides

2:15 Leaching of sulfides

3:00 Afternoon tea

3:15 Practical exercises

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# Separation Processes in Hydrometallurgy

May 25,26

## Course Program

### Day 1

9:00 Chemical principles  
10:30 Morning coffee  
10:45 Precipitation / crystallisation  
12:30 Lunch  
1:30 Solvent extraction I  
3:00 Afternoon tea  
3:15 Practical exercises

**COST: \$1400 + GST**

**Registration by 1 May**

The cost includes a comprehensive set  
of course notes and teas/lunches

### Day 2

9:00 Solvent extraction II  
10:30 Morning coffee  
10:45 Adsorption processes  
12:30 Lunch  
1:30 Ion exchange  
3:00 Afternoon tea  
3:15 Practical exercises

**Prior participation in the  
Fundamentals of Hydrometallurgy  
Course will assist in deriving  
maximum benefit from this course.**

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# Metal Reduction Processes

May 28,29

## Course Program

### Day 1

9:00 Thermodynamics of reduction  
10:30 Morning coffee  
10:45 Cementation  
12:30 Lunch  
1:30 Pressure reduction  
3:00 Afternoon tea  
3:15 Practical exercises

**COST: \$1400 + GST**

**Registration by 1 May**

The cost includes a comprehensive set of course notes and teas/lunches

### Day 2

9:00 Principles of electrowinning  
10:30 Morning coffee  
10:45 Electrowinning practice  
12:30 Lunch  
1:30 Electrowinning practice  
3:00 Afternoon tea  
3:15 Practical exercises

**Prior participation in the  
Fundamentals of Hydrometallurgy  
Course will assist in deriving  
maximum benefit from this course.**

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## REGISTRATION FORM

Please copy this form if you wish to send more delegates to any course. If you register three or more delegates to any course, or plan to attend three or more courses please contact us to discuss discounts. We also run courses on-site, please contact us for details.

I wish to register for the following short course(s):

Fundamentals of Hydrometallurgy .....	Apr 20-22 .....	\$1925	[ ]
Principles and Practice of Leaching .....	Apr 23-24 .....	\$1540	[ ]
Separation Processes.....	May 25-26 .....	\$1540	[ ]
Metal Reduction Processes .....	May 28-29 .....	\$1540	[ ]

TOTAL \$

THESE FEES INCLUDE GST

Parker Centre for Integrated Hydrometallurgy Solutions      ABN: 27 437 324 492.

Name:.....

Company:.....

Address:.....

.....

Phone:.....Fax:.....

Email:.....

Please debit my    Bankcard    Mastercard    Visa    for the amount of \$  
(AMEX cards are not accepted)

Card No:

Expiry date:

Cardholder Name:

Signature

If you would prefer to be invoiced please complete the form and add any details necessary for invoicing such as purchase order number or financial officer.

Please return the completed form to

Lian Chan, Extractive Metallurgy, Murdoch University, South Street, Murdoch,  
WA 6150.      L.Chan@murdoch.edu.au      Fax: 08 9360 6343