



CONTROL OF  
**POTLINE SCRUBBER**  
 & FUGITIVE EMISSIONS  
 for Aluminum Smelters Course



**May 21-25, 2017**

**Grand Hotel Reykjavik; Reykjavik, Iceland**

**Sunday, May 21**

4:00 pm - 6:00 pm	Registration
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**Monday, May 22**

7:00 am - 5:00 pm	Registration and Course Assistance
8:00 am - 10:00 am	<b>1. Welcome &amp; Introduction</b> (15min, MMH) <b>2. Overview of Emissions</b> (20min, MMH) <b>3. Emission Fundamentals -</b> A. Fluoride Generation & Scrubbing Basics (45min, MMH) & Particulates (15 min, DW). <b>B. Group Discussion - Key Factors for F Generation (25min)</b>
10:00 am - 10:15 am	<b>Break</b>
10:15 am - 12:00 pm	<b>3. Emission Fundamentals</b> C. Sulfur Emissions (45 min, SB) <b>4. Dry Scrubber Design -</b> A. Cell Ventilation (30min, SB), B. Key Operating Areas (30min, DW).
12:00 pm - 1:00 pm	<b>Lunch</b>
1:00 pm - 2:30 pm	<b>5. Pot Ventilation &amp; Scrubber Technologies</b> A. Dry Scrubbers Technology & Designs (60min, SL). B. Gas flows (30min, SL)
2:30 pm - 2:40 pm	<b>Break</b>
2:40 pm - 3:40 pm	<b>5. Dry Scrubber Design, cont'd -</b> C. Alumina Flows (30min, SL).
3:40 pm - 4:00 pm	<b>Break</b>
4:00 pm - 5:00 pm	<b>6. Group Discussions – Attendees to share their own major control challenges.</b>
5:00 pm - 7:00 pm	Welcome Reception

**Tuesday, May 23**

7:00 am - 12:00 pm	Registration and Course Assistance
8:00 am - 10:00 am	<b>7. Dry Scrubber Operation -</b> A. Operational Considerations & Challenges, Control of Gas Flows (90min, SL) B. Control of Alumina Flows, Performance KPIs for Control (part 1) (30min, SL)
10:00 am - 10:15 am	<b>Break</b>
10:15 am - 11.45 am	<b>7. Dry Scrubber Operation - (90min, SL)</b> B. Control of Alumina Flows, Performance KPIs for Control (part 2)
12.00 PM	<b>Departure for Nordural</b>
1 PM - 4.30 PM	<b>8. Plant tour at Nordural.</b> - Lunch - Safety induction and briefing - Plant tours
5:30 PM	<b>Return to Hotel</b>

**Wednesday, May 24**

7:00 am - 5:00 pm	Registration and Course Assistance
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8:00 am - 10:00 am	<b>9. Dry Scrubber Operation</b> (90min, MMH) A. Impact of Alumina Properties & Specifications vs. HF vs. Scrubbing B. Emission Monitors (30min, DW) (part 1)
10:00 am - 10:15 am	<b>Break</b>
10:15 am - 12:00 pm	<b>9. Dry Scrubber Operation</b> - B. Emission Monitors (30min, DW) (part 2)  <b>10. SO<sub>2</sub> Wet Scrubbers</b> (75min, SB) A. Design Principles & Key Areas B. Operation & Control - designs, types, operational aspects
12:00 pm - 1:00 pm	<b>Lunch</b>
1:00 pm - 2:30 pm	<b>11. Management of Potroom Fugitive Emissions</b> (90min, DW) - Fluorides, Particulates, PFCs, Impact of Operations, Emission Controls, Maintenance, Process Control, Audits
2:30 pm - 2:40 pm	<b>Break</b>
2:40 pm - 3:40 pm	<b>12. PFC emissions</b> (60 min, DW)
3:40 pm - 4:00 pm	<b>Break</b>
4:00 pm - 5:00 pm	<b>13. Group Discussion - What if Controls required for other Smelting Emissions?</b>
5:00 pm - 6:30 pm	<b>Special lecture on process calculations for environmental engineering</b> (90min, SB) (Optional presentation)

### Thursday, May 25

7:00 am - 5:00 pm	<b>Registration and Course Assistance</b>
8:00 am - 10:00 am	<b>14. Guidelines for Engineering, Procurement, &amp; Construction of Scrubber Technologies</b> (60min, SB).  <b>15. A. Advancements &amp; Developments in Scrubber Emission Controls</b> - (60 min, SB) - Drivers, Pot Gas Cooling, Advanced Filter Bags, Compact GTCs, etc.
10:00 am - 10:15 am	<b>Break</b>
10:15 am - 12:00 pm	<b>15. B. Advancements in Potroom Emission Controls</b> (20min, DW) - Draft, Spent Anode Controls  <b>16. Common Problems with Potroom Roof Emissions</b> (70 min, SL) <i>Attendee preparation time</i>
12:00 pm - 1:00 pm	<b>Lunch</b>
1:00 pm - 2:30 pm	<b>17. Attendee Presentations to Group - Emission Management Plans for Key Issues Faced</b>
2:30 pm - 2:40 pm	<b>Break</b>
2:40 pm - 4:00 pm	<i>Attendee Presentations, Continued.</i> <b>18. Graduation Ceremony</b>
3:40 PM	<b>Course Concludes</b>

#### Instructor Leads

MMH- Prof. Margaret Hyland  
SB- Mr. Stephan Broek  
SL-Mr. Steve Lindsay  
SW- Dr. David S. Wong