GRADUATE STUDIES
PhD Degrees
During 2009, 78 PhD students have worked at Department of Materials Science and Engineering. 15 students have been awarded the degree PhD:

Major subject: Extractive metallurgy.
Dr. lecture: The origin of Fe, Cr and Ni impurities in SoG-Si and their effect on the conversion efficiency of MC Si solar cells.
Thesis advisor: Professor, Dr.ing. Merete Tangstad.
Co-supervisor: Professor emeritus Thorvald Abel Engh.
Examination committee: Professor, Director Roderick I.L.Guthrie, McGill Metals Processing Centre, McGill University, Montreal, Canada.
Dr. Kjetil Hildal, Elkem Solar Kristiansand, Norway.
Associate Professor Gabriella Tranell (chair).

Major subject: Extractive metallurgy.
Dr. lecture: Sawing of silicon wafers – Techniques, effects on wafer and sawdust recycling.
Thesis advisor: Professor, Dr.ing. Merete Tangstad.
Co-supervisor: Professor, Dr.philos. Otto Lohne.
Examination committee: Professor Kazuki Morita, Institute of Industrial Science, The University of Tokyo, Japan.
Researcher, Dr. Anne Karin Soiland, Elkem Solar, Kristiansand, Norway.
Professor Ragnhild Aune (chair).

Major subject: Physical metallurgy.
Dr. lecture: The role of atomistic simulations in the modelling of recrystallization and grain growth – status and perspectives.
Thesis advisor: Professor, Dr.ing. Knut Marthinsen.
Co-supervisor: Professor emeritus, Erik Aasmund Nes.
Examination committee: Professor, PhD Andrew Godfrey, Department of Materials Science and Engineering, Tsingua University, China.
Dr. Nils Sandberg, Department of Physics, School of Engineering Sciences, Royal Institute of Technology, AlbaNova University Center, Sweden.
Professor, Dr.ing. Randi Holmestad, Department of Physics, NTNU (chair).

Major subject: Electrochemistry.
Dr. lecture: Nitrogen fixation on aluminium.
Thesis advisor: Professor, PhD Kemal Nisancioglu.
Examination committee: Dr. Alison Davenport, University of Birmingham, UK
Principal engineer Jan Halvor Nordlien, Hydro Aluminium R&D, Norway
Associate Professor, Dr.ing. Hilde Lea Lein (chair).

Major subject: Physical metallurgy.
Dr. lecture: Influence of oxide inclusions and films on the porosity and properties of aluminium castings.
Thesis advisor: Professor, PhD Lars Arnberg.
Co-supervisor: Professor emeritus Thorvald Abel Engh.
Examination committee: Professor Mark E. Schlesinger, Department of Materials Science and Engineering, Missouri University of Science and Technology, Rolla, MO, USA.
Dr. Bjørn, Rasch, Hydro Aluminium, Research and Technology Development, Sunndalsøra,
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<td>Fredrik Haakonsen</td>
<td>Optimizing of Stromhard autenitic manganese steel.</td>
<td>Physical metallurgy.</td>
<td>The metallurgy of knifemaking - past and present.</td>
<td>Professor, Dr.philos Jan Ketil Solberg</td>
<td>Professor Mihai Chimasera, Politechnica University of Bucharest, Romania. Associate Professor Ragnar Gjengedal, University College of Bergen, Norway.</td>
<td>Professor, Dr.ing. Merete Tangstad (chair).</td>
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<td>Morten Sundheim Jensen</td>
<td>Hot pressing and degradation of TiB₂ inert cathodes.</td>
<td>Inorganic chemistry.</td>
<td>Material challenges in future aluminium production.</td>
<td>Professor, Dr.ing. Mari-Ann Einarsrud and Professor, Dr.ing. Geir Martin Haarberg.</td>
<td>Professor Mats Johnsson, Division of Inorganic Chemistry, Arrhenius Laboratory, Stockholm University, Sweden. Principal Engineer, Dr.ing. Eirik Hagen, Primary Metal Technology, Hydro Aluminium, Norway. Associate Professor, Dr.ing. Hilde Lea Lein (chair).</td>
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<td>Morten Karlsen</td>
<td>EBSD based in-situ observations of polycrystalline materials in the SEM.</td>
<td>Physical metallurgy.</td>
<td>Microstructure and properties of arctic steels for offshore applications.</td>
<td>Professor, Dr.sci. Jarle Hjelen.</td>
<td>Professor Dr.ing. Øystein Grong, Professor, Dr.ing. Mari-Ann Einarsrud and Professor, Dr.techn. Hans Jørgen Roven.</td>
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<td>Anders Lilleby</td>
<td>Experimental and finite element studies of cold pressure welding of commercial purity aluminium by divergent extrusion.</td>
<td>Physical metallurgy.</td>
<td>Mechanical properties of ultra-fine grained materials produced by accumulated roll bounding.</td>
<td>Professor, Dr.ing. Øystein Grong.</td>
<td>Associate Professor, Dr.ing. Hallstein Hemmer.</td>
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<td>Ove Bjørn Paulsen</td>
<td>Rigid bonded glass ceramic seals for high temperature membrane reactors and solid oxide fuel cells.</td>
<td>Inorganic chemistry.</td>
<td>Dense ceramic membranes in power generation with CO₂ capture - possibilities and challenges.</td>
<td>Professor, Dr.ing. Mari-Ann Einarsrud.</td>
<td>Research Director Rune Bredesen, SINTEF Materials and Chemistry.</td>
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| Examination committee: | Senior Scientist Dr. Mohan Menon, Risø DTU, Denmark.  
| | Professor, Dr.ing. Kjell Wiik (chair).  
| **Silje Rodahl:** | Adhesion of organic coatings on aluminium.  
| Dr. lecture: | Electrochemistry.  
| Thesis advisor: | Dr. lecture: Functional Coatings.  
| Examination committee: | Professor, PhD Kemal Nisancioglu.  
| | Senior Engineer, Dr. ing. Sarbjyot Haarberg, MainTech AS, Trondheim, Norway.  
| | Associate Professor, PhD Frode Seland (chair).  
| **Sverre Magnus Selbach:** | Structure, stability and phase transitions of multiferroic BiFeO₃.  
| Dr. lecture: | Inorganic chemistry.  
| Thesis advisor: | Lead-free ferroelectrics and piezoelectrics – materials and challenges.  
| Co-supervisors: | Professor, Dr.ing. Tor Grande.  
| Examination committee: | Professor Thomas Tybell, Department of Electronics and Telecommunications, NTNU.  
| | Senior Engineer, Dr. ing. Mari-Ann Einarsrud.  
| | Associate Professor, PhD Frode Seland (chair).  
| **Maneesh C. Srivastava:** | High pressure die casting of aluminium and magnesium alloys.  
| Dr. lecture: | Physical metallurgy.  
| Thesis advisor: | Impurities in commercial aluminium – their origin, distribution and effect on properties.  
| Co-supervisor: | Professor, Dr.philos. Otto Lohne.  
| Examination committee: | Professor, Dr.ing. Mari-Ann Einarsrud.  
| | Senior Engineer, Dr. ing. Harald Arnjot Øye.  
| | Professor, Dr.ing. Øystein Grong (chair).  
| **Cecilie Ødegård:** | The effect of Fe, Al, Ca and Ti in silicon on the conversion of silicon tetrachloride to trichlorosilane.  
| Dr. lecture: | Inorganic chemistry.  
| Thesis advisor: | Superpure aluminium: Production, properties and use.  
| Co-supervisor: | Professor, Dr.ing. Trygve Foosnæs.  
| Examination committee: | Professor Emeritus, Dr.techn. Harald Arnjot Øye.  
| | Technology Manager Anja Olußen Sjaastad, REC ASA, Sandvika, Norway.  
| | Technology Manager, Martin Ystenes (chair).  