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- presenting research in a new way

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Chalmers University Library

emtacl12

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About Chalmers

- Founded in 1829
- Technological university
- 11,000 students, 200 research groups, 17 departments
- OA mandate since 2010

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Chalmers Publications Library (CPL)

- Started in 2004, by Chalmers Library
- ≈ 36,000 publications
- ≈ 2,000 OA publications (from 2010-)
- Collaboration with Gothenburg University
- Participates in SwePub & OpenAIRE
- Scigloo, open source software

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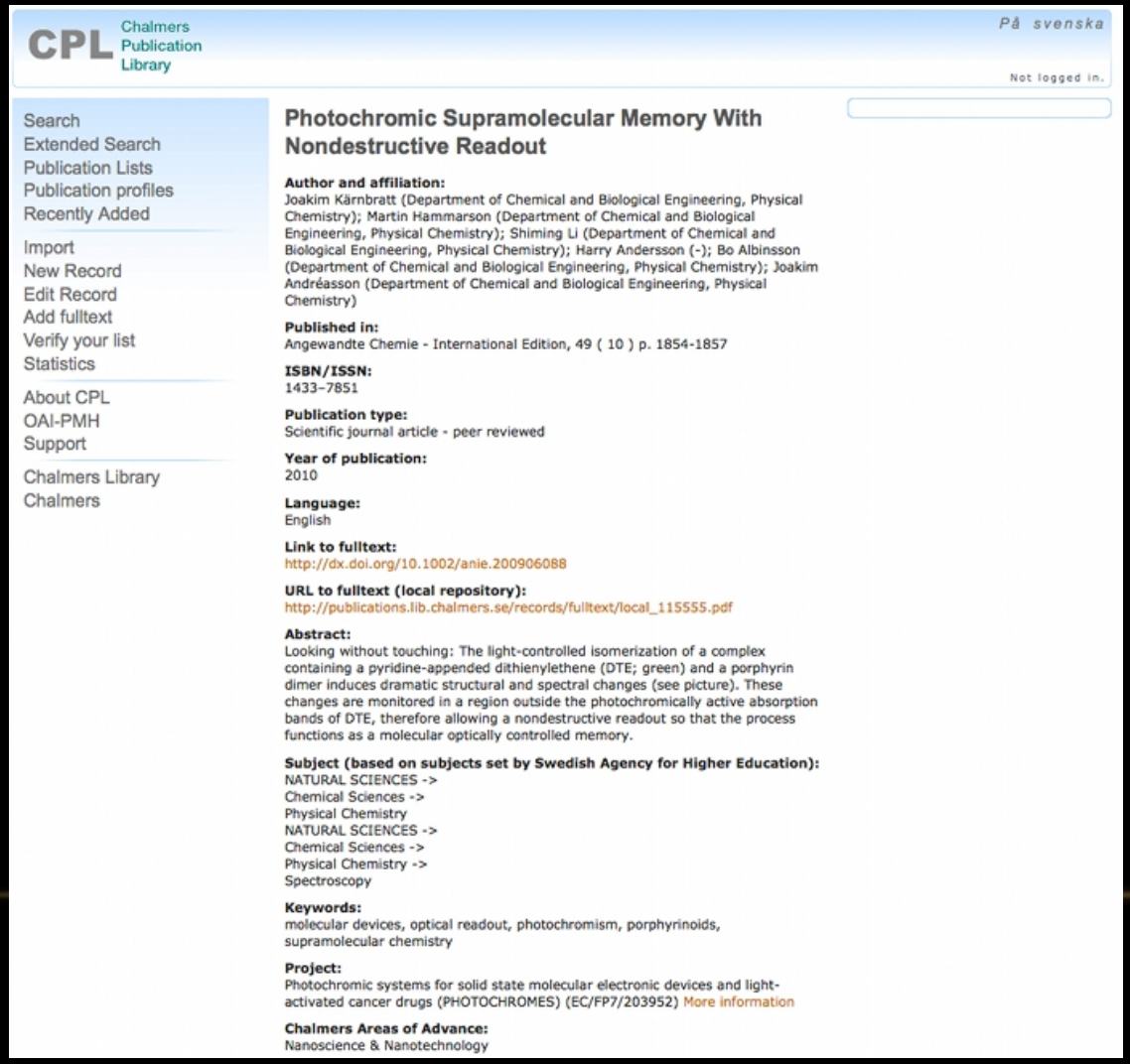

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Photochromic Supramolecular Memory With Nondestructive Readout

Author and affiliation:
Joakim Kärnbratt (Department of Chemical and Biological Engineering, Physical Chemistry); Martin Hammarson (Department of Chemical and Biological Engineering, Physical Chemistry); Shiming Li (Department of Chemical and Biological Engineering, Physical Chemistry); Harry Andersson (-); Bo Albinsson (Department of Chemical and Biological Engineering, Physical Chemistry); Joakim Andréasson (Department of Chemical and Biological Engineering, Physical Chemistry)

Published in:
Angewandte Chemie - International Edition, 49 (10) p. 1854-1857

ISBN/ISSN:
1433-7851

Publication type:
Scientific journal article - peer reviewed

Year of publication:
2010

Language:
English

Link to fulltext:
http://dx.doi.org/10.1002/anie.200906088

URL to fulltext (local repository):
http://publications.lib.chalmers.se/records/fulltext/local_115555.pdf

Abstract:
Looking without touching: The light-controlled isomerization of a complex containing a pyridine-appended dithienylethene (DTE; green) and a porphyrin dimer induces dramatic structural and spectral changes (see picture). These changes are monitored in a region outside the photochromically active absorption bands of DTE, therefore allowing a nondestructive readout so that the process functions as a molecular optically controlled memory.

Subject (based on subjects set by Swedish Agency for Higher Education):
NATURAL SCIENCES ->
Chemical Sciences ->
Physical Chemistry
NATURAL SCIENCES ->
Chemical Sciences ->
Physical Chemistry ->
Spectroscopy

Keywords:
molecular devices, optical readout, photochromism, porphyrinoids, supramolecular chemistry

Project:
Photochromic systems for solid state molecular electronic devices and light-activated cancer drugs (PHOTOCHROMES) (EC/FP7/203952) More information

Chalmers Areas of Advance:
Nanoscience & Nanotechnology

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- Addresses - departments / groups
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- Subject headings
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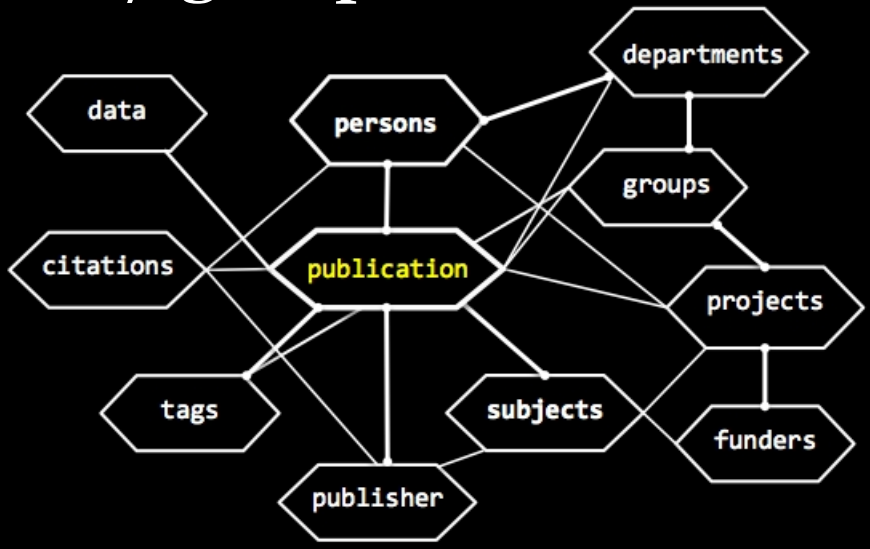
- Research projects
- External data



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- Data mining
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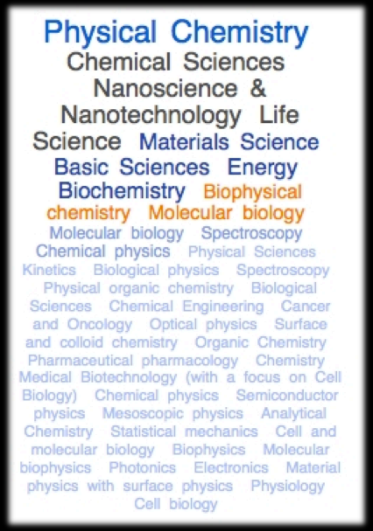
- First beta launched in 2011



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Publication Profiles – Person view

Joakim Kärnbratt

Most recent publications

Cationic ester-containing gemini surfactants: Determination of aggregation numbers by time-resolved fluorescence quenching

Ali Reza Tehrani-Bagha ; Joakim Kärnbratt ; Jan-Erik Löfroth ; Krister Holmberg

Scientific journal article - peer reviewed, 2012

Belt-Shaped π-Systems: Relating Geometry to Electronic Structure in a Six-Porphyrin Nanoring

Johannes K. Sprafke ; Dmitry V. Kondratuk ; Michael Wykes ; Amber L. Thompson ; Markus Hoffmann ; Rokas Drevinskas ; Wei-Hsin Chen ; Chaw Keong Yong ; Joakim Kärnbratt ; Joseph E. Bullock ; Marc Malfois ; Michael R. Wasielewski ; Bo Albinsson ; Laura M. Herz ; Donatas Zigmantas ; David Beljonne ; Harry L. Anderson

Scientific journal article - peer reviewed, 2011

Temperature Dependence of Charge Separation and Recombination in Porphyrin Oligomer-Fullerene Donor-Acceptor Systems

Axel Kahnt ; Joakim Kärnbratt ; L. J. Esdaile ; M. Hutin ; K. Sawada ; H. L. Anderson ; Bo Albinsson

Scientific journal article - peer reviewed, 2011

Conjugated Porphyrin Oligomers - Influence of Conformation and Topology on the Electronic Communication

Joakim Kärnbratt

Doctoral thesis, 2011

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Publication Profiles - Relations

Departments

Department of Chemical and Biological Engineering, Physical Chemistry
Department of Physical Chemistry (-2003)
Department of Chemistry and Bioscience (-2004)

Co-authors

Jerker Mårtensson , **Bengt Nordén** , **Marcus Wilhelmsson** , **Joakim Andréasson** , Karl Börjesson, Thomas Ljungdahl, Mattias P. Eng, T. Brown, Peter Sandin, Karin Pettersson, Per Lincoln, H. L. Anderson, Joakim Kärnbratt, Joanna Wiberg, C. J. Wilson, John Tumpane, Anders Holmén, Jonas K. Hannestad

Related subjects

Surfaces and interfaces Materials Science Nanoscience & Nanotechnology Basic Sciences Condensed Matter Physics Structural and vibration physics Physical Sciences Material physics with surface physics Energy Sustainable Development Quantum chemistry Innovation & Entrepreneurship Computational physics Life Science Semiconductor physics Mesoscopic physics Defects and diffusion Transport Molecular physics Superconductivity Macromolecular physics Chemical physics Solid state chemistry Surface and colloid chemistry Theoretical Chemistry C3SE/SNIC

Collaborations with other departments

Department of Chemistry (GU)
Department of Microtechnology and Nanoscience
Department of Physics (GU)
Department of Applied Physics

Most published authors

Bengt Nordén, Owe Orwar, Bo Albinsson, Per Lincoln, Lars Öhrström, Aldo Jesorka, Marcus Wilhelmsson, Vratislav Langer, Joakim Andréasson, Jerker Mårtensson, Fredrik Westerlund, Björn Åkerman, Karl Börjesson, Sven Larsson, Mattias P. Eng, Alshima'a A. Massoud, Mohamed Ghazzali, Elin Esbjörner, Frida Svensson, Nils Carlsson, Shiming Li, Thomas Ljungdahl, Nikola Markovic, Peter Sandin, Ilja Czolkos

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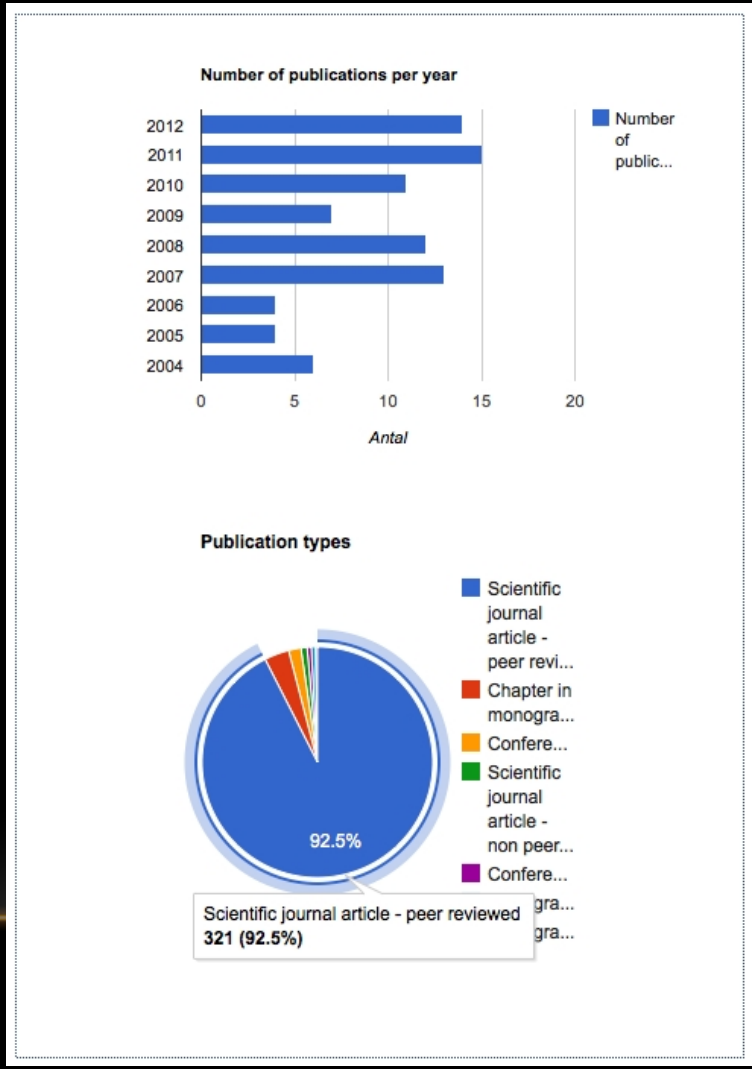

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Angewandte Chemie - International Edition (1433–7851). Vol. 49 (2010), 10, p. 1854-1857.
[Scientific journal article - peer reviewed]

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Keywords: molecular devices, optical readout, photochromism, porphyrinoids, supramolecular chemistry

This publication belongs to the following areas of advance :

- Nanoscience & Nanotechnology

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Department of Chemical and Biological Engineering, Physical Chemistry

Subjects
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Physical Chemistry
Spectroscopy

Related works
This publication is a part of the following work(s):

Mimicking the Binary World: Photochromic Compounds in Molecular Logic

Conjugated Porphyrin Oligomers - Influence of Conformation and Topology on the Electronic Communication

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Projects
This publication is a result of the following project(s):

Photochromic systems for solid state molecular electronic devices and light-activated cancer drugs (PHOTOCHROMES) (EC/FP7/203952)

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- Increase the visibility of Chalmers research
- Discover new research
- Find a researcher
- Find a subject
- Promote open access publishing
- Promote collaboration
- Library goodwill

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Technical notes

- Relational data model
- XML, Solr, Javascript
- Service based architecture
- Open source
- Scopus, WoS & Google APIs

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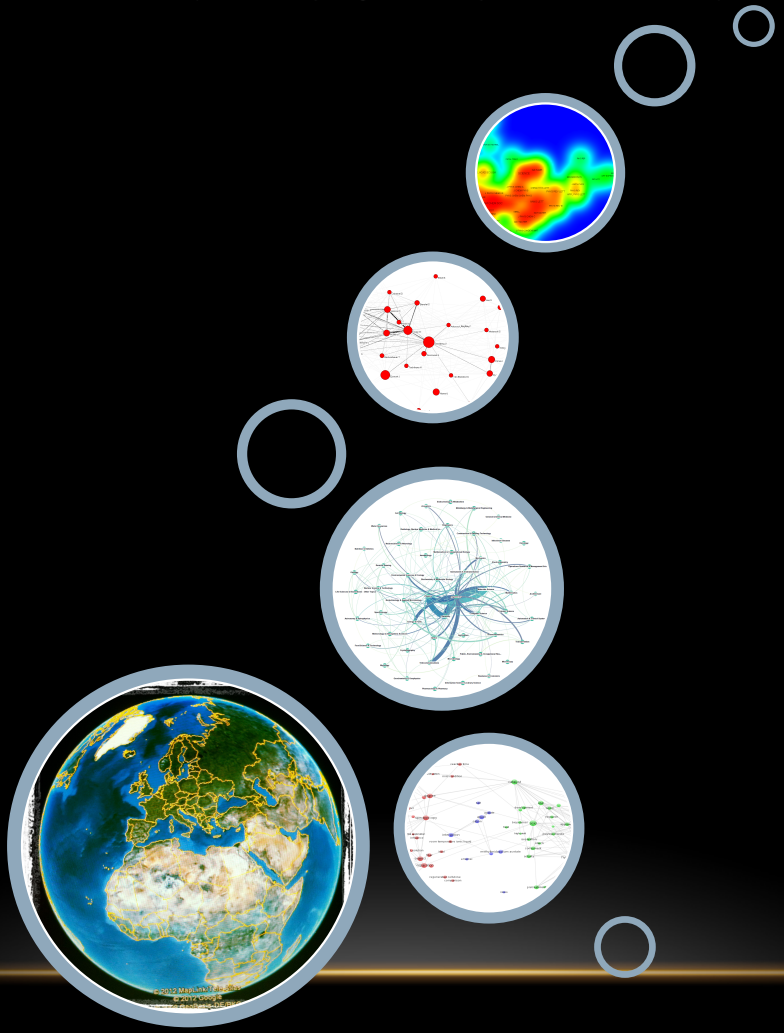

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Visualizing research collaboration

- Web of Science 2011 (Chalmers/Onsala)
- 1000 different addresses
- Data cleaning
- Frequency distribution
- GPS Visualizer
- Google Maps/Google Earth

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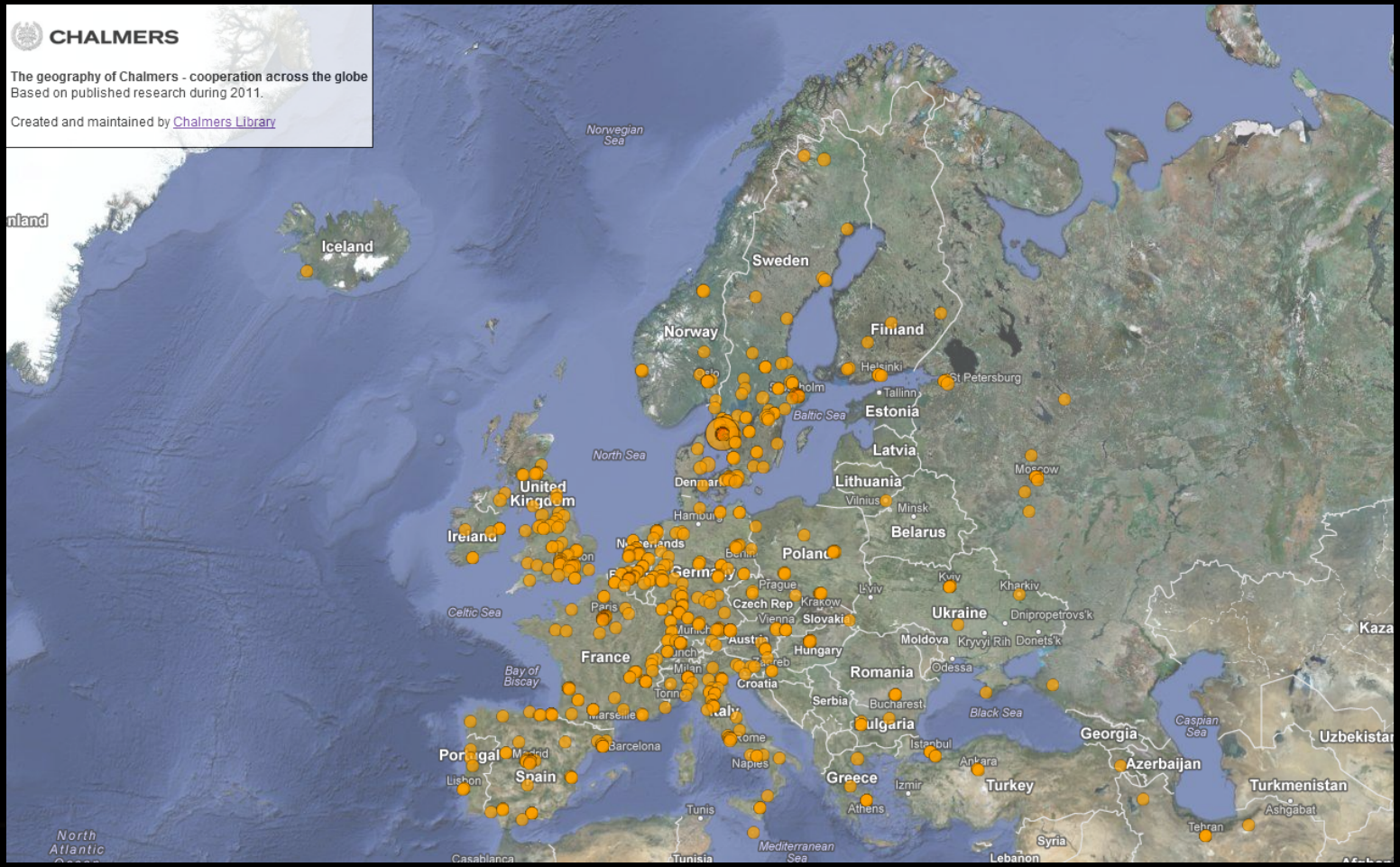
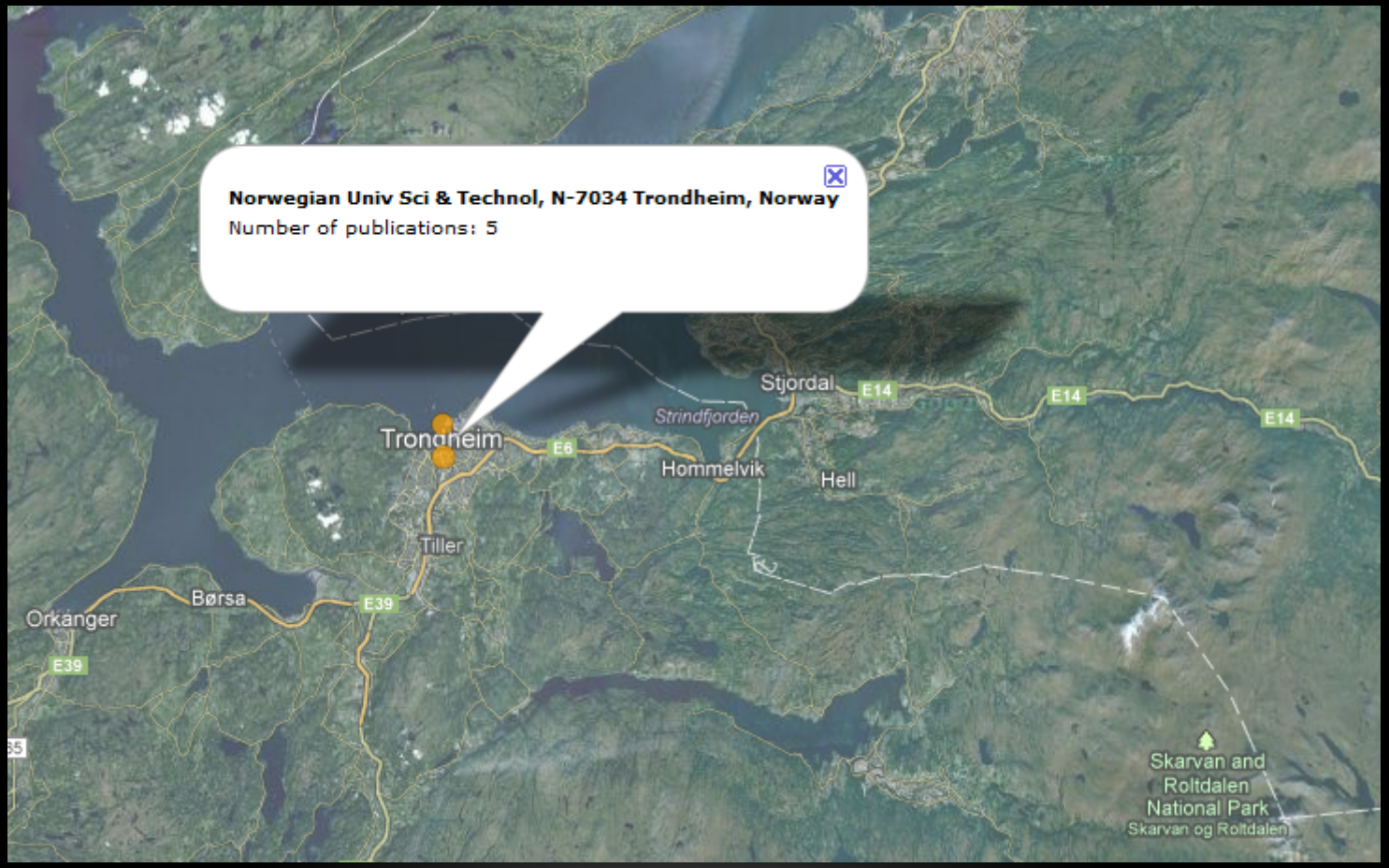
The Geography of Chalmers 2011




Norwegian Univ Sci & Technol, N-7034 Trondheim, Norway
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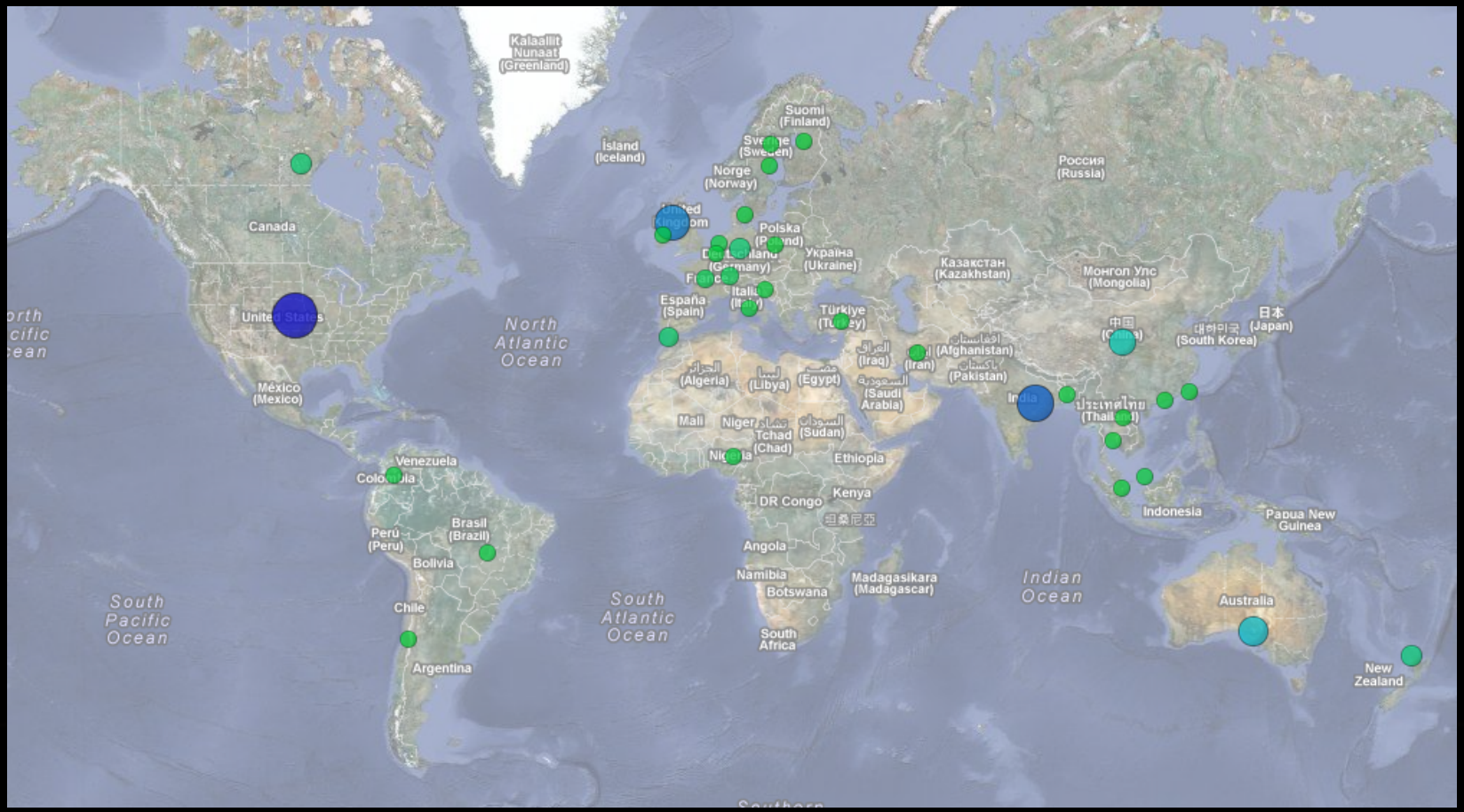
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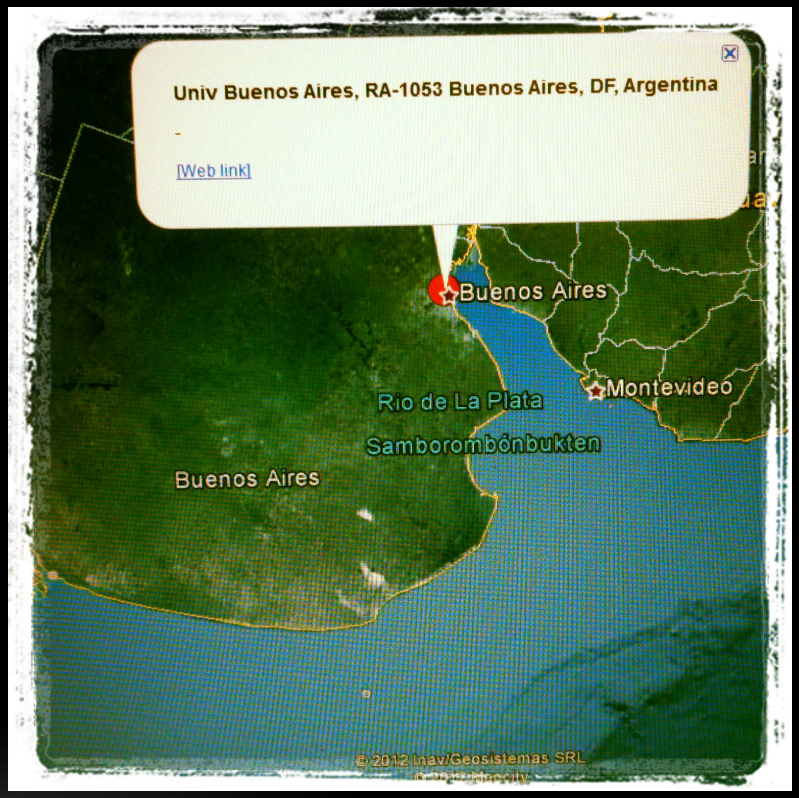
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