DOI Outreach 2014

Ed Pentz
Executive Director, CrossRef
References


The problem

References


No reference link – not very helpful for online readers.
One solution

References


The problem

References


Broken links are a problem
The page cannot be found
Strategic .org

• CrossRef: membership association of publishers

• Founded for strategic reasons: services best achieved collaboratively

• Broad church: Commercial, societies, non-profits, university presses, OA publishers – 66% non-profit

• All subjects: STM, humanities, social science, professional

• A powerful NETWORK
Technical Infrastructure

• Unique identification

• Persistent citation and linking – CrossRef DOIs

• Managed system – no broken links

• Content discoverable
Provides an *organizational* foundation for widespread linking

- One agreement with CrossRef is a linking agreement with all other CrossRef participants
- Membership association for cooperative development of a digital linking infrastructure
- Business model neutral
Lots of Content
CrossRef generates more than a billion annual “clicks” or resolutions.
More numbers:
2,600 Members represent 5,400 publishers

CrossRef Membership

# Voting Members  # Nonvoting Publishers
Members Come from 81 Countries
Who can participate?

• Any scholarly publisher of primary content that abides by the member rules
• Sponsoring publishers
  – Some publishers act on behalf of others
• Any other participating organization is an Affiliate
Are members restricted to ...

• Commercial publishers?
  – No, CrossRef has no rules about business types
  – > 75% of CrossRef members are not-for-profit
  – > 80% are in the lowest fee category ($275/year)
What is a Sponsor?

• An organization that assigns CrossRef DOIs and creates outbound reference links for other publishers
  – **Sponsoring Publishers** are members with their own content and working on behalf of Sponsored Publishers
  – **Sponsoring Entities** are affiliates working on behalf of Represented Members

• Sponsoring entities: includes mEDRA, Airiti, JaLC, ISTIC – can sign up to CrossRef with other RAs
The solution

References
www.hmj.org/journal.index.pho?e3344.2a.ie


http://dx.doi.org/10.1186/1477-7525-4-39
RESEARCH

Kinetic Measurement of the Step Size of DNA Unwinding by Escherichia coli UvdA Helicase

Janid A. Ali and Timothy M. Lohman

The kinetic mechanism by which the DNA repair helicase UvdA of Escherichia coli unwinds duplex DNA was examined with the use of a series of oligodeoxynucleotides with duplex regions ranging from 10 to 40 base pairs.


68. Studer, F.W. (1975) Gene 0.3 of bacteriophage T7 acts to overcome the DNA restriction system of the host J. Mol. Biol., 94, 283–295.[CrossRef][ISTI][Medline]
Spin-orbit-coupled quantum wires and Majorana fermions on zigzag edges of monolayer transition-metal dichalcogenides
Phys. Rev. B 89, 155317 – Published 22 April 2014
Rui-Lin Chu, Gui-Bin Liu, Wang Yao, Xiaodong Xu, Di Xiao, and Chuanwei Zhang

ABSTRACT

Majorana fermions, quantum particles with non-Abelian exchange statistics, are not only of fundamental importance, but also building blocks for fault-tolerant quantum computation. Although certain experimental breakthroughs for observing Majorana fermions have been made recently, their conclusive detection is still challenging due to the lack of proper material properties of the underlined experimental systems. Here we propose a platform for Majorana fermions based on edge states of certain nontopological two-dimensional semiconductors with strong spin-orbit coupling, such as monolayer group-VI transition-metal dichalcogenides (TMDs). Using first-principles calculations and tight-binding modeling, we show that zigzag edges of monolayer TMD can host a well isolated single edge band with strong spin-orbit-coupling energy. Combining with proximity induced $s$-wave superconductivity and in-plane magnetic fields, the zigzag edge supports robust topological Majorana bound states at the edge ends, although the two-dimensional bulk itself is nontopological.
Why do I keep saying “CrossRef DOI” instead of just “DOI”? Because it’s all about the services, not just the DOIs!
Different DOI Registration Agencies provide different services BUT RAs work together and a number of the RAs provide CrossRef services
What’s a Registration Agency?

International DOI Foundation (IDF): oversees the central DOI system, promote DOI as a standard, and provides an organizational infrastructure that ensures persistence and interoperability.

Corporation for National Research (IRI): they (among other things) are responsible for the Handle system, which is the technology that causes DOIs to resolve.

Registration Agencies (RAs): Register DOIs on behalf of other organizations. CrossRef is a RA.
doi® Registration Agencies

- Ariti
- CrossRef
- China National Knowledge Infrastructure (CNKI)
- DataCite
- Entertainment Identifier Registry (EIDR)

- The Institute of Scientific and Technical Information of China (ISTIC)
- Japan Link Center (JaLC)
- Multilingual European DOI Registration Agency (mEDRA)
- Publications Office of the European Union (OP)
CrossRef Services

- Reference linking
- Cited-by linking
- Metadata feeds
- Plagiarism screening
- Update identification
- Funder identification
- Text and data mining
  - License information
  - Abstracts
  - Version information
FundRef
A standard way of reporting funding sources for published scholarly research
Review Article

Lineage Switching in Acute Leukemias: A Consequence of Stem Cell Plasticity?

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\textsuperscript{2}Oncology Research Unit, Oncology Hospital, Mexican Institute of Social Security, 06720 Mexico City, DF, Mexico
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Why does this matter?

- Funding bodies cannot easily track the published output of funding
- Publishers cannot easily report which articles result from research supported by specific funders or grants
- Institutions cannot easily link funding received to published output
- Lack of standard metadata for funding sources makes it difficult to analyse or data mine
FundRef Pilot
FundRef Registry

- 5,900 funder names and ID numbers from curated Elsevier SciVal registry, donated to FundRef
- Hosted by CrossRef, available under CC0
- Updated and extended monthly
- Publishers use this list to ensure consistency

www.crossref.org/fundref/fundref_registry.html
<table>
<thead>
<tr>
<th>Title</th>
<th>Journal Article published</th>
<th>Journal</th>
<th>Authors</th>
<th>DOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the resting state connectivity have hemispheric asymmetry? A near-infrared spectroscopy study</td>
<td>Jan 2014 in NeuroImage</td>
<td>volume 85 on pages 400 to 407</td>
<td>Andrei V. Medvedev</td>
<td><a href="http://dx.doi.org/10.1016/j.neuroimage.2013.05.092">http://dx.doi.org/10.1016/j.neuroimage.2013.05.092</a></td>
</tr>
<tr>
<td>High-resolution visualization of mouse cardiac microvasculature using optical histology</td>
<td>Jan 2014 in Biomedical Optics Express</td>
<td>volume 5 issue 1 on page 69</td>
<td>Austin J. Moy, Patrick C. Lo, Bernard Choi</td>
<td><a href="http://dx.doi.org/10.1364/boe.5.000069">http://dx.doi.org/10.1364/boe.5.000069</a></td>
</tr>
<tr>
<td>Toward nodal staging of axillary lymph node basins through intradermal administration of fluorescent imaging agents</td>
<td>Jan 2014 in Biomedical Optics Express</td>
<td>volume 5 issue 1 on page 183</td>
<td></td>
<td><a href="http://dx.doi.org/10.1364/boe.5.000183">http://dx.doi.org/10.1364/boe.5.000183</a></td>
</tr>
</tbody>
</table>
Journal Article Near-field enhanced ultraviolet resonance Raman spectroscopy using aluminum bow-tie nano-antenna

Published 2012 in Applied Physics Letters volume 101 issue 11 on page 113116

Authors: Ling Li, Shuang Fang Lim, Alexander A. Puretzky, Robert Riehn, H. D. Hallen

http://dx.doi.org/10.1063/1.4746747
Journal Article Characterization of the transport topology in patient-specific abdominal aortic aneurysm models

Published 2012 in Physics of Fluids volume 24 issue 8 on page 081901

Authors: Amirhossein Arzani, Shawn C. Shadden

http://dx.doi.org/10.1063/1.4744984
Published 14 Aug 2008 in Journal of Psychoceramics volume 5 issue 11 on pages 1 to 3  
Research funded by Basic Energy Sciences, Office of Science, U.S. Department of Energy (DE-SC0001091) | National Science Foundation (CHE-1152342)  
Authors: Josiah Carberry  
[http://dx.doi.org/10.5555/12345678](http://dx.doi.org/10.5555/12345678)  

Journal Article  The Global State of Psychoceramics Research  
Published 3 Feb 2013 in Annals of Psychoceramics B volume 2013 on pages 1 to 8  
Research funded by Basic Energy Sciences, Office of Science, U.S. Department of Energy (high-energy-metaphysics-SC0001091) | National Science Foundation (psychoceramics-1152342)  
Authors: Josiah Carberry  
[http://dx.doi.org/10.5555/515151](http://dx.doi.org/10.5555/515151)
Identifiers + Metadata

Services +
Community

=  

Powerful system for collaboration: persistent linking, discoverability, trust
6-Word Mission

Improving scholarly communication through community collaboration