

[ScienceWatch Home](#)[Inside This Month...](#)[Interviews](#)[Featured Interviews](#)[Author Commentaries](#)[Institutional Interviews](#)[Journal Interviews](#)[Podcasts](#)[Analyses](#)[Featured Analyses](#)[What's Hot In...](#)[Special Topics](#)[Data & Rankings](#)[Sci-Bytes](#)[Fast Breaking Papers](#)[New Hot Papers](#)[Emerging Research Fronts](#)[Fast Moving Fronts](#)[Corporate Research Fronts](#)[Research Front Maps](#)[Current Classics](#)[Top Topics](#)[Rising Stars](#)[New Entrants](#)[Country Profiles](#)[About Science Watch](#)[Methodology](#)[Archives](#)[Contact Us](#)[RSS Feeds](#)

scienceWATCH[®].com

TRACKING TRENDS & PERFORMANCE IN BASIC RESEARCH

[Interviews](#)[Analyses](#)[Data & Rankings](#)

2010 : May 2010 - Fast Moving Fronts : Robert Bergman & Jonathan Ellman Discuss N-heterocycle C-H activation by Rh(L)

May 2010

Robert G. Bergman & Jonathan A. Ellman talk with *ScienceWatch.com* and answer a few questions about this month's Fast Moving Fronts paper in the field of Chemistry.



Article: Experimental and computational studies on the mechanism of N-heterocycle C-H activation by Rh(L)

Authors: Wiedemann, SH; Lewis, JC; **Ellman, JA; Bergman, RG**

Journal: J AM CHEM SOC, 128 (7): 2452-2462 FEB 22 2006

Addresses: Univ Calif Berkeley, Dept Chem, Berkeley, CA 94720 USA.

Univ Calif Berkeley, Dept Chem, Berkeley, CA 94720 USA.

Univ Calif Berkeley, Lawrence Berkeley Lab, Div Chem Sci, Berkeley, CA 94720 USA.

SW: Why do you think your paper is highly cited?

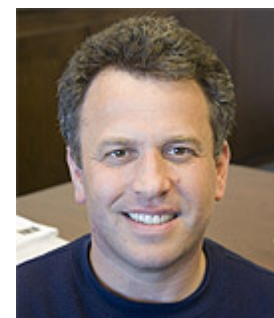
The manuscript is highly cited because enthusiasm for the potential use of carbon-hydrogen (C-H) functionalization in the production of pharmaceuticals, agrochemicals, and materials is increasing exponentially.

SW: Would you summarize the significance of your paper in layman's terms? Does it describe a new discovery, methodology, or synthesis of knowledge?

The manuscript describes elucidation and detailed characterization of a new mechanistic pathway for reactions in which C-H bonds in organic molecules are "activated" by transition metals. This process allows the C-H bonds to be "functionalized," or converted catalytically into new carbon-carbon bonds or other other useful groups attached to carbon.

This facilitates the synthesis of complex molecular products from simple precursors in a single step with minimal waste byproducts.

Moreover, this new mechanistic pathway enables the efficient synthesis of interesting and useful chemical



Coauthor:

Jonathan A. Ellman

structures that were previously inaccessible by C-H functionalization processes.

Robert G. Bergman

Gerald E. K. Branch Distinguished Professor

Department of Chemistry

University of California at Berkeley

Berkeley, CA, USA

[Web](#) | [Web](#)

Jonathan A. Ellman

Professor of Chemistry

Department of Chemistry

University of California at Berkeley

Berkeley, CA, USA

[Web](#) | [Web](#)

KEYWORDS: oxidative stress; membrane potential; permeability transition pore; redox; cardiac myocytes; oscillation; CA-2&-INDUCED MEMBRANE TRANSITION; NITRIC-OXIDE SYNTHASE; REACTIVE OXYGEN; PERMEABILITY TRANSITION; HYDROGEN-PEROXIDE; BENZODIAZEPINE-RECEPTOR; SUCCINATE-DEHYDROGENASE; HEART-MITOCHONDRIA; CARDIAC MYOCYTES; ANION CHANNEL.

 PDF

[back to top](#) 

2010 : May 2010 - Fast Moving Fronts : Robert Bergman & Jonathan Ellman Discuss N-heterocycle C-H activation by Rh(L)

[Science Home](#) | [About Thomson Reuters](#) | [Site Search](#)

[Copyright](#) | [Terms of Use](#) | [Privacy Policy](#)