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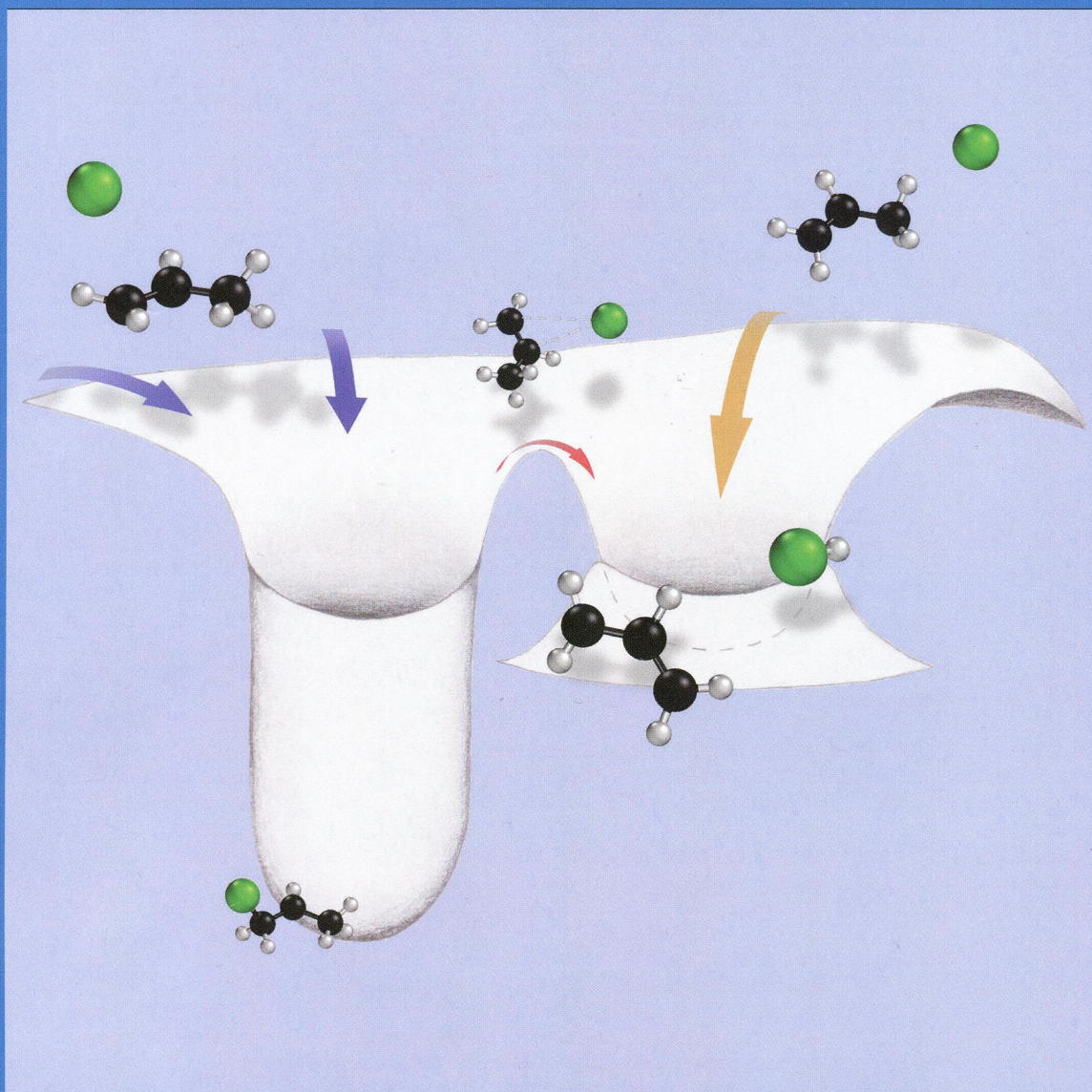
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A



Direct and Indirect
Pathways in
Cl + Propene Merge
To Produce HCl + Allyl
(see page 5A)

ISOLATED MOLECULES, CLUSTERS, RADICALS, AND IONS; ENVIRONMENTAL CHEMISTRY,
GEOCHEMISTRY, AND ASTROCHEMISTRY; THEORY



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ON THE COVER: Direct and indirect pathways in Cl + propene merge to produce HCl + allyl. Chlorine atoms abstract hydrogen from small alkenes through either direct or indirect reaction mechanisms. The two pathways yield different product energy distributions. Direct abstraction produces rotationally cold HCl in its vibrational ground and excited states. Large-amplitude motions carry longer-lived chlorine-addition complexes toward the direct path but produce rotationally hot HCl in its vibrational ground state. Cover art made in collaboration with Marie Preston. See page 5595.

Articles

Kinetics and Dynamics

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[dx.doi.org/10.1021/jp503772h](https://doi.org/10.1021/jp503772h)

Experimental Investigation of the Low Temperature Oxidation of the Five Isomers of Hexane

Zhandong Wang, Olivier Herbinet,* Zhanjun Cheng, Benoit Husson, René Fournet, Fei Qi, and Frédérique Battin-Leclerc

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[dx.doi.org/10.1021/jp5042734](https://doi.org/10.1021/jp5042734)

Direct and Indirect Hydrogen Abstraction in Cl + Alkene Reactions

Thomas J. Preston,* Greg T. Dunning, Andrew J. Orr-Ewing,* and Saulo A. Vázquez

Spectroscopy, Photochemistry, and Excited States

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[dx.doi.org/10.1021/jp503318u](https://doi.org/10.1021/jp503318u)

Understanding the Two-Photon Absorption Spectrum of PE2 Platinum Acetylide Complex

Marcelo G. Vivas,* Leonardo De Boni, Thomas M. Cooper, and Cleber R. Mendonca*

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[dx.doi.org/10.1021/jp503392e](https://doi.org/10.1021/jp503392e)

Raman, Surface-Enhanced Raman, and Density Functional Theory Characterization of (Diphenylphosphoryl)(pyridin-2-, -3-, and -4-yl)methanol

Edyta Proniewicz,* Ewa Pięta, Krzysztof Zborowski, Andrzej Kudelski, Bogdan Boduszek, Tomasz K. Olszewski, Younkyoo Kim, and Leonard M. Proniewicz

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[dx.doi.org/10.1021/jp5051589](https://doi.org/10.1021/jp5051589)

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Behavior of Carboxylic Acids upon Complexation with Beryllium Compounds

Kateryna Mykolayivna-Lemishko, M. Merced Montero-Campillo,* Otilia M6, and Manuel Yáñez

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Unique Bonding Nature of Carbon-Substituted Be₂ Dimer inside the Carbon (sp²) Network

Rafal Roszak, Szczepan Roszak,* D. Majumdar, Lucyna Firlej, Bogdan Kuchta, and Jerzy Leszczynski*

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Dispersion Interactions in Small Zinc, Cadmium, and Mercury Clusters

Richard Hatz, Vesa Hänninen, and Lauri Halonen*