



## **Kiss, János, PhD, D.Sc.**

[http://www2.sci.u-szeged.hu/radio\\_rekin/index.html](http://www2.sci.u-szeged.hu/radio_rekin/index.html)

**Born:** Izsák, Hungary, 16 Sept. 1947

### **Family status:**

married (wife: Deér, Aranka, PhD, biochemist)

3 children: Márta (1975), Eszter (1976), András (1985)

**Address:** HUN-REN-SZTE Reaction Kinetics and Surface Chemistry Research Group,  
Department of Applied and Environmental Chemistry, University of Szeged, H-6720 Szeged, Rerrich Béla squer 1  
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### **Professional data:**

High school graduation: Piarist Grammer School, Kecskemét: 1966

chemist, M.Sc. 1967-1972 József Attila University, Szeged

PhD. 1972-1976 József Attila University, Szeged

Candidate of Science 1985, Hungarian Academy of Sciences

D.Sc. 1993, Hungarian Academy of Sciences

Dr. habil. University of Szeged, 1997

### **Experience:**

1972-1976 : assistant

1976-1985 : postdoc, scientific researcher

1985-1994 : senior scientist

1994- : scientific advisor, professor

2017- : Emeritus researcher of the Hungarian Academy of Sciences, professor

### **Fellowships:**

Alexander von Humboldt fellow, Institute of Physical Chemistry, University of Hamburg with Prof. F. Steinbach, 1982/83 (12 months).

Visiting researcher with Prof. J. M. White, Department of Chemistry, University of Texas at Austin, 1990-1992 (26 months).

Visiting professor at the University of Texas at Austin, three months in 1996 and in 2000.

Visiting professor (Senior Humboldt Fellow) at the Institute of Physical Chemistry Erlangen-Nürnberg 2010/2011 three months.

Visiting professor at the Institute of Physical Chemistry Erlangen-Nürnberg in 2015 for one month.

### **Teaching activity:**

Electron spectroscopy in surface science and catalysis

Surface photochemistry

Solid state chemistry, catalysis

### **Scientific Awards:**

Academic Prize for young scientist 1991 (Hungarian Academy of Sciences)

Academic Prize 2001 (Hungarian Academy of Sciences)

### **Research interest:**

surface science, nanosciences, solid-gas interactions and dynamics, photo-induced surface processes, characterization of adsorbed species and surface intermediates, catalysis, electron-, ion- and photoelectron spectroscopy (Auger, XPS, UPS, ELS, LEIS) and infrared spectroscopy (RAIRS)

### **Activity**

He has ~200 papers in peer-reviewed journals. Citations are around 5000. Hirsh-index: 42/43. He has 170 contributions at national and international conferences. From 2001 to 2009 he is the leader of the Reaction Kinetics Research Group of the Hungarian Academy of Sciences at the University of Szeged.

1998-2014 Member of the Council of the Faculty of Science and Informatics

2001-2008 Member of the Council the MTA Subsidized Research Group

2011-2012 Guest Editor of Catalysis Today

2012- Editorial Member of the Int. Journal of Sensors and Sensors Networks

2020- Editorial Member of Catalysts

2012-2015 Leader of Research Group Linkage Programme of Alexander von Humboldt Foundation

2013- Editorial Board Member in Science Publishing Group System

2016- Deputy Secretary of Hungarian Humboldt Association

2017 head of ECOSS-33 Scientific Program Office

2017-2018 Guest Editor of Topics in Catalysis

2018-2021 Guest Editor of Catalysts

2020 Member of Program Committee of ECOSS-35

2022- Member of Frontier Materials Board

Supervised 25 graduated students

Supervised 10 PhD students.

**Language skills:** English, German, Hungarian

**Membership:**

Member of Hungarian Chemical Society

Member of Loránd Eötvös Physical Society

Member of American Chemical Society

Member of Catalysis working committee of Hungarian Academy of Sciences

Member of working committee of Surface and Nanochemistry of Hungarian Academy of Sciences (2019- president)

Member of International Union Vacuum Society (IUVSTA) National Committee (2000-2006), president of the Surface Science National Division 2019-

Member of working committee of Material Science of Academy Comm. in Szeged

Member of Batthyány Society of Professors 2011-

Member of Dugonics Community 2020-

Founding member of Chemistry Doctoral School of the University of Szeged

Management Committee Member of COST-CM1300 (2013-2017)

**PUBLISHED PAPERS OF JÁNOS KISS**

1. F. Solymosi, J. Raskó, S. Börcsök, J. Kiss:  
Effect of composite Propellant Catalysts on the Stabilities of  $\text{HClO}_4$  and the  $\text{HClO}_4\text{-NH}_3$  System  
Proceedings of the 14<sup>th</sup> Symposium on Combustion, Pittsburgh (1973) 1309-1316.  
[https://doi.org/10.1016/S0082-0784\(73\)80117-1](https://doi.org/10.1016/S0082-0784(73)80117-1)
2. F. Solymosi, F. Bozsó, J. Kiss:  
Oxidation of ethylene on  $\text{SnO}_2\text{-Cr}_2\text{O}_3$  catalysts  
Proceedings of Euchem Conference on the role of catalysis in problem with pollution, Santander (1973)
3. F. Solymosi, J. Kiss:  
 $\text{SnO}_2\text{-Cr}_2\text{O}_3$  as a Catalyst for the low Temperature Reduction of Nitric Oxide  
J. C. S. Chemical Communication (1974) 509-510.
4. F. Solymosi, J. Kiss:  
A nitrogén-monoxid alacsony hőmérsékletű redukciója  $\text{SnO}_2\text{-Cr}_2\text{O}_3$  katalizátoron  
Magyar Kémiai Folyóirat 81 (1975) 143-144.
5. F. Solymosi, J. Kiss:  
Removal of  $\text{NO}_x$  Pollutant by Catalytic Combustion Reaction  
Proceedings of the 15<sup>th</sup> Symposium on Combustion, Pittsburgh (1975) 1233-1242.
6. F. Solymosi, J. Kiss:  
Adsorption and Reduction of NO on Tin (IV) Oxide Catalysts  
Journal of Catalysis 41 (1976) 202-211.  
[https://doi.org/10.1016/0021-9517\(76\)90335-3](https://doi.org/10.1016/0021-9517(76)90335-3)
7. F. Solymosi, J. Kiss:  
A nitrogén-monoxid adszorpciója és katalitikus redukciója ón-dioxid katalizátoron  
Magyar Kémiai Folyóirat 81 (1975) 450-457.
8. F. Solymosi, J. Kiss:  
Adsorption and Reduction of NO on Tin(IV) Oxide Doped with Chromium(III) Oxide  
Journal of Catalysis 54 (1978) 42-51.  
[https://doi.org/10.1016/0021-9517\(78\)90025-8](https://doi.org/10.1016/0021-9517(78)90025-8)
9. F. Solymosi, J. Kiss:  
A nitrogén-monoxid adszorpciója és katalitikus redukciója króm(III)-oxiddal adalékolt ón-dioxid katalizátoron  
Magyar Kémiai Folyóirat 85 (1979) 153-160.

10. F. Solymosi J. Kiss, J. Sárkány:  
On the Reaction of Surface Izocyanate over Platinum Catalyst  
Proceedings of 3<sup>rd</sup> International Conference of Solid Surfaces, Vienna (1977) 819-822.
11. F. Solymosi, J. Kiss, J. Sárkány:  
Felületi izocianát komplex reakcióképességének vizsgálata Pt/Al<sub>2</sub>O<sub>3</sub> katalizátoron  
Magyar Kémiai Folyóirat 84 (1978) 465-469.
12. J. Kiss, A. Berkó, F. Solymosi:  
The Adsorption of N Atoms on Pt(110) and Cu(111) Surfaces  
in: Proc. IVC-8, ICSS, ECOSS-3, Cannes (1980) 521-524.
13. J. Kiss, A. Berkó, F. Solymosi:  
A nitrogénatomok adszorpciójának vizsgálata Pt(110) és Cu(111) egykristály felületeken  
Magyar Kémiai Folyóirat 87 (1981) 566-569.
14. F. Solymosi, J. Kiss:  
Interaction of HNCO with Cu(111) Surface  
in: Proc. IVC-8, ICSS-4, ECOSS-3, Cannes (1980) 213-216.
15. J. Kiss, F. Solymosi:  
A Cu(111) felület és az izociánsav közötti kölcsönhatás vizsgálata  
Magyar Kémiai Folyóirat 87 (1981) 563-566.
16. F. Solymosi, J. Kiss:  
Adsorption and Decomposition of HNCO on Cu(111) Surface Studied by Auger Electron,  
Energy Loss and Thermal Desorption Spectroscopy  
Surface Science 104 (1981) 181-198.  
[https://doi.org/10.1016/0039-6028\(81\)90129-1](https://doi.org/10.1016/0039-6028(81)90129-1)
17. F. Solymosi, J. Kiss:  
A HNCO adszorpciójának és bomlásának vizsgálata Cu(111) felületen Auger-, elektron,  
energiaveszteségi és termikus deszorpciós spektroszkópiával  
Magyar Kémiai Folyóirat 88 (1982) 131-139.
18. F. Solymosi, J. Kiss:  
Adsorption and Surface Dissociation of HNCO on Pt(110) Surfaces: LEED, AES, ELS and  
TDS Studies  
Surface Science 108 (1981) 641-659.  
[https://doi.org/10.1016/0039-6028\(81\)90570-7](https://doi.org/10.1016/0039-6028(81)90570-7)
19. F. Solymosi, J. Kiss:  
A HNCO adszorpciója és felületi disszociációja Pt(111) felületen: LEED, Auger-, elektron  
energiaveszteségi és termikus deszorpciós spektroszkópiai vizsgálatok  
Magyar Kémiai Folyóirat 88 (1982) 149-158.
20. F. Solymosi, J. Kiss:  
Interaction of C<sub>2</sub>N<sub>2</sub> with Clean and Oxygen-Dosed Cu(111) Surface Studied by AES, ELS  
and TDS Measurements

Surface Science 108 (1981) 368-380.  
[https://doi.org/10.1016/0039-6028\(81\)90456-8](https://doi.org/10.1016/0039-6028(81)90456-8)

21. F. Solymosi, J. Kiss:  
A dición kölcsönhatása a tiszta és az oxigénnel kezelt Cu(111) felületen: Auger-, energiaveszteségi és termikus deszorpciós spektroszkópiai vizsgálatok  
Magyar Kémiai Folyóirat 88 (1982) 173-180.
22. F. Solymosi, J. Kiss:  
Interaction of HCOOH with Rhodium Surface Studied by Auger Electron, Electron Energy Loss and Thermal Desorption Spectroscopy  
Journal of Catalysis 81 (1983) 95-106.  
[https://doi.org/10.1016/0021-9517\(83\)90149-5](https://doi.org/10.1016/0021-9517(83)90149-5)
23. J. Kiss, F. Solymosi:  
A hangyasav és a ródiumfelület kölcsönhatása  
Magyar Kémiai Folyóirat 90 (1984) 396-405.
24. J. Kiss, F. Solymosi:  
Surface Behaviour of NCO Species on Rh(111) and Polycrystalline Rh Surface  
Surface Science 135 (1983) 243-260.  
[https://doi.org/10.1016/0039-6028\(83\)90221-2](https://doi.org/10.1016/0039-6028(83)90221-2)
25. J. Kiss, F. Solymosi:  
Az NCO felületi komplex viselkedése Rh(111) és polikristályos Rh felületeken  
Magyar Kémiai Folyóirat 90 (1984) 406-414.
26. F. Steinbach, R. Krall, J.-X. Cai, J. Kiss:  
The Flux-Induced Switch in the Mechanism of the Catalytic Decomposition of CH<sub>3</sub>OH on Ni Foil as Studied by MBRS and Time-Resolved PES  
In: Proc. 8<sup>th</sup> International Congress on Catalysis, Berlin (1984) p.359-370.
27. F. Solymosi, J. Kiss:  
The Effect of Boron Impurity on the Adsorption and Dissociation of CO<sub>2</sub> on Rh Surfaces  
Chemical Physics Letters 110 (1984) 639-642.  
[https://doi.org/10.1016/0009-2614\(84\)85478-0](https://doi.org/10.1016/0009-2614(84)85478-0)
28. J. Kiss, F. Solymosi:  
Bór szennyeződés hatása a CO<sub>2</sub> adsszorpciójára és disszociációjára Rh felületen  
Magyar Kémiai Folyóirat 91 (1985) 286-288.
29. F. Solymosi, J. Kiss:  
Impurity Effects in the Adsorption and Decomposition of CO<sub>2</sub> on Rh  
Surface Science 149 (1985) 17-32.  
[https://doi.org/10.1016/S0039-6028\(85\)80010-8](https://doi.org/10.1016/S0039-6028(85)80010-8)
30. J. Kiss, F. Solymosi:  
A CO<sub>2</sub> adszorpciója és disszociációja tiszta és szennyezett Rh-felületeken  
Magyar Kémiai Folyóirat 91 (1985) 559-563.

31. F. Steinbach, J. Kiss, R. Krall:  
Identification and Stability of CH<sub>3</sub>, CH<sub>2</sub> and CH Species on Co and Ni Surfaces, a PES Investigation  
Surface Science 157 (1985) 401-412.  
[https://doi.org/10.1016/0039-6028\(85\)90682-X](https://doi.org/10.1016/0039-6028(85)90682-X)
32. J. Kiss, F. Solymosi:  
Adsorption of H<sub>2</sub>O on Clean and Boron-Contaminated Rh Surfaces  
Surface Science 177 (1986) 191-206.  
[https://doi.org/10.1016/0039-6028\(86\)90266-9](https://doi.org/10.1016/0039-6028(86)90266-9)
33. L. Bugyi, J. Kiss, F. Solymosi:  
Interaction of NO with Potassium and Boron Contaminated Rh Surfaces  
Journal of Vacuum Science and Technology A5(4) (1987) 863-864.  
<https://doi.org/10.1116/1.574326>
34. F. Solymosi, J. Kiss, I. Kovács:  
Adsorption and Decomposition of Formic Acid on Clean and Potassium Dosed Rh(111) Surfaces  
Journal of Vacuum Science and Technology A5(4) (1987) 1108-1109.  
<https://doi.org/10.1116/1.574809>
35. F. Solymosi, J. Kiss, I. Kovács:  
Adsorption of HCOOH on Rh(111) and Its Reaction with Preadsorbed Oxygen  
Surface Science 192 (1987) 47-65.  
[https://doi.org/10.1016/S0039-6028\(87\)81161-5](https://doi.org/10.1016/S0039-6028(87)81161-5)
36. J. Kiss, F. Solymosi:  
Adsorption of H<sub>2</sub>O and O<sub>2</sub> on Rh surfaces studied by AES, ELS and TDS  
Vacuum 37 (1987) 194-194.  
[https://doi.org/10.1016/0042-207X\(87\)90143-6](https://doi.org/10.1016/0042-207X(87)90143-6)
37. F. Solymosi, J. Kiss, I. Kovács:  
Adsorption and Decomposition of HCOOH on Potassium Promoted Rh(111) Surfaces  
Journal of Physical Chemistry 92 (1988) 796-803.  
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38. J. Kiss, K. Révész, F. Solymosi:  
Photoelectron Spectroscopic Studies of the Adsorption of CO<sub>2</sub> on Potassium-Promoted Rh(111) Surface  
Surface Science 207 (1988) 36-54.  
[https://doi.org/10.1016/0039-6028\(88\)90245-2](https://doi.org/10.1016/0039-6028(88)90245-2)
39. J. Kiss, K. Révész, F. Solymosi:  
Segregation of Boron and Its Reaction with Oxygen on Rh  
Applied Surface Science 37 (1989) 95-110.  
[https://doi.org/10.1016/0169-4332\(89\)90976-8](https://doi.org/10.1016/0169-4332(89)90976-8)

40. J. Kiss, G. Klivényi, K. Révész, F. Solymosi:  
Photoelectron Spectroscopic Studies on the Dissociation of CO on Potassium-Dosed Rh(111) Surface  
Surface Science 223 (1989) 551-568.  
[https://doi.org/10.1016/0039-6028\(89\)90680-8](https://doi.org/10.1016/0039-6028(89)90680-8)
41. F. Solymosi, J. Kiss, K. Révész:  
Effects of Illumination on the Surface Behavior of CH<sub>3</sub>Cl on a Clean and a K-Dosed Pd(100) Surfaces  
Journal of Physical Chemistry 94 (1990) 2224-2226.
42. L. Bugyi, J. Kiss, K. Révész, F. Solymosi:  
Interaction of NO with Clean and K-Dosed Rh(111) Surfaces: EELS and PES Studies  
Surface Science 233 (1990) 1-11.  
[https://doi.org/10.1016/0039-6028\(90\)90170-D](https://doi.org/10.1016/0039-6028(90)90170-D)
43. J. Kiss, A. Berkó, K. Révész, F. Solymosi:  
Effects of Potassium on the Adsorption and Dissociation of CH<sub>3</sub>Cl on Pd(100)  
Surface Science 240 (1990) 59-70.  
[https://doi.org/10.1016/0039-6028\(90\)90730-V](https://doi.org/10.1016/0039-6028(90)90730-V)
44. F. Solymosi, J. Kiss, K. Révész:  
Surface Photochemistry: Adsorption and Dissociation of CH<sub>3</sub>Cl on clean and K-Promoted Pd(100) Surfaces  
Journal of Chemical Physics 94 (1991) 8510-8519.  
<https://doi.org/10.1063/1.460084>
45. S. K. Jo, J. Kiss, J. A. Polanco, J. M. White:  
Identification of Second Layer Adsorbates: Water and Chloroethane on Pt(111)  
Surface Science 253 (1991) 233-244.
46. J. Kiss, D. Lennon, S. K. Jo, J. M. White:  
Photoinduced Dissociation and Desorption of N<sub>2</sub>O on a Pt(111) Surface  
Journal of Physical Chemistry US 95pp. (1991) 8054-8059. 6p.
47. J. Kiss, J. M. White:  
Photo-Driven Chemistry in Coadsorbed N<sub>2</sub>O and CO on Pt(111)  
Journal of Physical Chemistry 95 pp.(1991) 7852-7857.
48. A. Cassuto, J. Kiss and J. M. White:  
On the Orientation of Low-Temperature  $\pi$ -Bonded Ethylene on Pt(111)  
Surface Science 255 (1991) 289-294.  
[https://doi.org/10.1016/0039-6028\(91\)90685-L](https://doi.org/10.1016/0039-6028(91)90685-L)
49. J. Kiss, D. Lennon, S. K. Jo, J. M. White:  
Photoinduced Dissociation and Desorption of N<sub>2</sub>O on a Pt(111) Surface  
Abs. of Papers of the American Chemical Society 201 (1991) 252-COLL.



50. Berényi D, Barna P, Bertóti I, Gergely G, Giber J, Gyulai J, Kövér L, Kiss J, Paál Z, Petó G, Solymosi F, Berényi Dénes, Gergely György, Giber János (szerk.)  
A felületkutatás helyzete hazánkban  
Budapest: Akadémia Kiadó, 1992. 171 p.  
(A szilárdtestkutatás legújabb eredményei 24. (sorozatszerkesztő: Siklós Tivadar))  
(ISBN: 9630563444)
  
51. Z.-M. Liu, X.-L. Zhou, D. A. Buchanan, J. Kiss, J. M. White:  
The Surface Chemistry of Vinyl Iodide  
Journal of American Chemical Society 114 (1992) 2031-2039.  
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52. S. K. Jo, J. Kiss, M. E. Castro, J. M. White:  
Mass Effects in Photodissociation of Chloromethane  
ACS Symposium Series 482 (1992) 310-314.
  
53. X. L. Zhou, Z. M. Liu, J. Kiss, J. M. White:  
Adsorption and Reaction of Chloriodomethane on Pt(111)  
Abs. of Papers of the American Chemical Society 203 (1992) 69-COLL.
  
54. J. Kiss, D. J. Alberas, J. M. White:  
Interaction of Low Energy Electrons and UV Photons with Adsorbed CF<sub>3</sub>Cl on Pt(111)  
Surface Science 275 (1992) 82-91.  
[https://doi.org/10.1016/0039-6028\(92\)90651-L](https://doi.org/10.1016/0039-6028(92)90651-L)
  
55. D. J. Alberas, J. Kiss, Z. M. Liu, J. M. White:  
Surface Chemistry of Hydrazine on Pt(111)  
Surface Science 278 (1992) 51-61.  
[https://doi.org/10.1016/0039-6028\(92\)90583-R](https://doi.org/10.1016/0039-6028(92)90583-R)
  
56. J. Kiss, D. J. Alberas, J. M. White:  
Surface Aligned Photoreaction of DBr with C<sub>2</sub>H<sub>4</sub> on Pt(111)  
Journal of American Chemical Society 114 (1992) 10486-10492.  
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Interaction of Low Energy Electron with SO<sub>2</sub> Layers on Ag(111): Comparison to Photochemistry  
Journal of Physical Chemistry 97 (1993) 902-909.  
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Interaction of CF<sub>3</sub>I with Pt(111)  
Surface Science 286 (1993) 233-245.  
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59. M. E. Castro, L. Pressley, J. Kiss, E. D. Pylant, S. K. Jo, X.-L. Zhou, J. M. White:  
Adsorption and Decomposition of CF<sub>3</sub>I on clean and iodine precovered Ag(111)  
Journal of Physical Chemistry 97 (1993) 8476-8484.

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Published by Marcel Dekker, Inc. 270 Madison Ave., New York, NY. 10016) Chap. 41
61. X.-L. Zhou, Z.-M. Liu, J. Kiss, D. W. Sloan, J. M. White:  
Surface Chemistry of Chloriodomethane, coadsorbed with H and O on Pt(111)  
Journal of American Chemical Society 117 (1995) 3565-3592.  
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SPIE 3573 (1998) 104-107.
63. J. Kiss, F. Solymosi:  
The Effect of Adsorbed Oxygen on the Stability of NCO on Rh(111) Studied by Reflection  
Absorption Infrared Spectroscopy  
Journal of Catalysis 179 (1998) 277-282.  
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64. A. Oszkó, J. Kiss, I. Kiricsi:  
XPS Investigations on the Feasibility of Isomorphous Substitution of Octahedral Al<sup>3+</sup> for  
Fe<sup>3+</sup> in Keggin ion Salts  
Physical Chemistry Chemical Physics 1 (1999) 2565-2568.  
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The Effects of Surface Additives on the Chemistry of CH<sub>3</sub> on Rh(111) as Studied by  
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Reaction of CH<sub>2</sub> with Adsorbed O on Ru(001) Surface  
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Adsorption and Reactions of CH<sub>2</sub>I<sub>2</sub> on Ru(001) Surface  
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Thermal and UV Photo-induced Decomposition of Azomethane on Rh(111)  
Physical Chemistry Chemical Physics 2 (2000) 4237-4241.  
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XPS Characterisation of Catalyst During Production of Multiwalled Carbon Nanotubes  
Physical Chemistry Chemical Physics 3 (2001) 155-158.  
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Preparation and Characterization of Catalysts Applied for Synthesis of Carbon Nanotubes via CCVD method  
Abs.of Papers of the American Chemical Society 221 (2001) 74.
71. J. Kiss, A. Kis, F. Solymosi:  
Reactivity of oxygen modified Ru(001) surface in the transformation of alkyl species  
Abs.of Papers of the American Chemical Society 221 (2001) U479.
72. J. Kiss, R. Barthos, F. Solymosi:  
The Effects of Potassium Overlayer on the Reaction Pathway of CH<sub>2</sub> and C<sub>2</sub>H<sub>5</sub> on Rh(111)  
Topics in Catalysis 14 (2001) 145-152.  
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Adsorption and Reaction of CH<sub>2</sub>I<sub>2</sub> on Clean and Oxygen Modified Ag(111): A RAIRS and TPD Study  
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