

**SEZNAM PUBLIKACÍ**  
(Z.Herman)

1. V. Čermák, Z. Herman:  
Umladungsreaktionen in der Ionenquelle des Massenspektrometers.  
Coll. Czech. Chem. Commun. 25, 1210 (1960).
2. Z. Herman:  
Preparation of Pure Carbon Monoxide (in Czech)  
Chem. listy 54, 378 (1960).
3. V. Čermák, Z. Herman:  
Réactions des ions excités dans N<sub>2</sub>, O<sub>2</sub>, CO, CO<sub>2</sub>, SO<sub>2</sub>, COS, CS<sub>2</sub>  
J. Chim. Phys. 87, 717 (1960).
4. V. Čermák, Z. Herman:  
Ion-Molecule Reactions in N<sub>2</sub>, O<sub>2</sub>, CO, CO<sub>2</sub>, SO<sub>2</sub>, COS, CS<sub>2</sub>(in Czech)  
Jaderná energie 6, No. 10 (1960).
5. Z. Herman:  
Radiometrische Bestimmung kleiner Mengen von Silber, Vismut und Magnesium.  
Coll. Czech. Chem. Commun. 26, 1925 (1961).
6. V. Čermák, Z. Herman:  
Molecular Dissociation in Charge-Transfer Reactions.  
Nucleonics 19, 106 (1961).
7. V. Čermák, Z. Herman:  
Excited Ion Reactions in N<sub>2</sub>, O<sub>2</sub>, CO, CO<sub>2</sub>, SO<sub>2</sub>, COS, CS<sub>2</sub>.  
"Chemical Effects of Nuclear Transformations", International Atomic Energy Agency, Vienna,  
1961, p. 99.
8. V. Čermák, Z. Herman:  
Application of the Mass Spectrometer in the study of Dissociative Charge-Transfer Reactions of  
Polyatomic Molecules.  
Coll. Czech. Chem. Commun. 27, 406 (1962).
9. V. Čermák, Z. Herman:  
On the Existence of a <sup>4</sup>Σ Excited State of N<sub>2</sub><sup>+</sup> Ions.  
Coll. Czech. Chem. Commun. 27, 1495 (1962).
10. V. Čermák, V. Hanuš, L. Hládek, Z. Herman, M. Pacák, L. Schulz:  
A Mass Spectrometer for Precise Determination of the Ratio of Deuterium to Hydrogen in  
Hydrogen Gas in the Region of Natural Deuterium Concentrations  
Coll. Czech. Chem. Commun. 27, 1633 (1962).
11. Z. Herman, V. Čermák:  
Mass Spectrometric Investigation of the Reactions of Ions and Excited Neutral Particles in  
Mixtures Containing Mercury Vapour.  
Coll.Czech. Chem. Commun. 28, 799 (1963).
12. Z. Knor, V. Ponec, Z. Herman, Z. Dolejšek, S. Černý:  
Chemisorption and Hydrogenation of Cyclopropane on Nickel.  
J. Catalysis 2, 299 (1963)
13. Z. Herman, V. Čermák:  
Mass Spectrometric Investigation of Reactions of Electronically Excited Neutral Particles with  
Alkali Metal Atoms.  
Nature 199, 588 (1963).

14. V. Čermák, Z. Herman:  
The Mass Spectrometric Detection of Highly Excited Long Lived States of Noble Gas Atoms.  
Coll. Czech. Chem. Commun. 29, 953 (1964).
15. K. Klier, Z. Herman:  
Exchange Reactions of Carbon Monoxide and Carbon Dioxide with Nickel Oxide.  
Coll. Czech. Chem. Commun. 29, 2556 (1964).
16. V. Čermák, Z. Herman:  
Ionizing Reactions of Noble Gas Atoms in Metastable States with Polyatomic Molecules.  
Coll. Czech. Chem. Commun. 30, 169 (1965).
17. V. Čermák, Z. Herman:  
Mass Spectrometric Study of the Formation of  $N_3^+$  and  $C_2O^+$  Ions.  
Coll. Czech. Chem. Commun. 30, 1343 (1965).
18. Z. Herman, V. Čermák:  
Ion Molecule Reactions in Mixtures of Gases with Alkali Metal and Mercury Vapour.  
Coll. Czech. Chem. Commun. 30, 2114 (1965).
- \*19. V. Čermák, Z. Herman:  
Ionization of Polyatomic Molecules in Collisions with Excited Metastable Noble Gas Atoms.  
In "Twelfth Annual Conference on Mass Spectroscopy", Montreal, Canada, 1964, p. 308.
20. Z. Herman, V. Čermák:  
Associative Ionization in Mixtures of Carbon Monoxide with Sodium and Potassium and the Mechanism of Associative Ionization Reactions.  
Coll. Czech. Chem. Commun. 31, 649 (1966).
21. Z. Herman, J. Kerstetter, T. Rose, R. Wolfgang:  
Crossed Beam Study of a Simple Ion-Molecule Reaction in the Energy Range 0.70-25 eV.  
J. Chem. Phys. 46, 2844 (1967).
22. Z. Herman, J. Kerstetter, T. Rose, R. Wolfgang:  
Crossed Beam Study of Ion-Molecule Reaction in the Energy Range 0.6-25 eV.  
Papers of the Fifth International Conference on the Physics of Electronic and Atomic Collisions, Leningrad, 1967, p. 243.
23. Z. Herman, V. Čermák:  
Associative Ionization Between Excited Hg Atoms and Polyatomic Molecules. Formation of  $Hg_{2+}$ .  
Papers of the Fifth International Conference on the Physics of Electronic and Atomic Collisions, Leningrad, 1967, p. 602.
24. Z. Herman, V. Čermák:  
Associative Ionization in Collisions of Excited Metastable Rare Gas Atoms and Polyatomic Molecules.  
Coll. Czech. Chem. Commun. 33, 468 (1968)
25. Z. Herman, J. Kerstetter, T. Rose, R. Wolfgang:  
Crossed Beam Studies of Ion-Molecule Reaction Mechanisms.  
Discussions of the Faraday Society 44, 123 (1967).
26. P. Hierl, Z. Herman, J. Kerstetter, R. Wolfgang:  
Energy Dependence of Energy Partition in Products of Direct Reactions: Crossed-Beam Studies and a New Model.  
J. Chem. Phys. 48, 4319 (1968)
27. V. Čermák, Z. Herman:  
Penning Ionization Electron Spectroscopy: Ionization of Mercury.  
Chem. Phys. Letters 2, 359 (1968).

28. Z. Herman, J. D. Kerstetter, T. L. Rose, R. Wolfgang:  
A Crossed Beam Apparatus for Investigation of Ion-Molecule Reactions.  
Rev. Sci. Instr. 40, 538 (1969).
29. Z. Herman, A. Lee, R. Wolfgang:  
Crossed Beam Studies of Energy Dependence of Intermediate Complex Formation in  
an Ion-Molecule Reaction.  
J. Chem. Phys. 51, 452 (1969).
30. Z. Herman, P. Hierl, A. Lee, R. Wolfgang:  
Direct Mechanism of Reaction  $\text{CH}_3^+ + \text{CH}_4 = \text{C}_2\text{H}_5^+ + \text{H}_2$   
J. Chem. Phys. 51, 454 (1969).
31. Z. Herman, P. Hierl, A. Lee, R. Wolfgang:  
Crossed Beam Studies of the Energy Dependence of Collision Complex Mechanism.  
Papers of the 6th International Conference on the Physics of Electronic and  
Atomic Collisions, MIT, Cambridge, MA, 1969, p. 79.
32. P. Hierl, Z. Herman, R. Wolfgang:  
Chemical Accelerator Studies of Isotope Effects in Collision Dynamics of Ion-Molecule Reactions:  
Elaboration of a Model for Direct Reactions.  
J. Chem. Phys. 53, 660 (1970).
33. Z. Herman, R. Wolfgang:  
Beam Studies of Ion-Molecule Reactions.  
In "Ion-Molecule Reactions" (J.L. Franklin, Ed.) Plenum Press, New York, 1972, p. 553.
34. J. Krenos, P. Hierl, J. Tully, Z. Herman, R. Wolfgang:  
Beam Studies of Several Elementary Ion Molecule Reactions.  
Advances in Mass Spectrometry 5, 162 (1971).
35. J.C. Tully, Z. Herman, R. Wolfgang:  
Crossed Beam Studies of the Reaction  $\text{N}^+ + \text{O}_2 \rightarrow \text{NO}^+ + \text{O}$ .  
J. Chem. Phys. 54, 1730 (1971).
36. A. Lee, R.L. LeRoy, Z. Herman, R. Wolfgang, J.C. Tully:  
Beam Studies of Energy and Lifetime Dependence of Unimolecular Decay: The Extent of  
Internal Equilibration.  
Chem. Phys. Letters 12, 589 (1972).
37. Z. Herman, K. Birkinshaw:  
Reactive Scattering of Ions.  
Ber. Bunsenges., Physik. Chem. 77, 566 (1973).
38. V. Pacák, K. Birkinshaw, Z. Herman:  
Kinematics of the Reaction  $\text{H}_2^+(\text{He}, \text{H})\text{HeH}^+$ .  
Papers of VIII ICPEAC, Beograd, 1973. Institute of Physics,  
Beograd, p. 106.
39. K. Birkinshaw, V. Pacák, Z. Herman:  
Angular Distribution Studies of Ion-Molecule Reactions.  
In "Interaction between Ions and Molecules" (P. Ausloos, Ed.), Plenum Press, New York, 1975, p. 95.
40. Z. Herman:  
Ion-Molecule Reactions (in Czech)  
Lectures of the Summer School "Elementary and Chemical Processes in Plasmas", Donovaly.  
Comenian University Press, Bratislava, 1975 p. 102

- \*41. Z. Herman:  
Kinematics of Ion-Molecule Collisions.  
Papers of the 23rd ASMS (American Society for Mass Spectrometry) Conference, Houston, 1975.
- \*42. Z. Herman, V. Pacák, K. Birkinshaw:  
Kinematics of Charge-Transfer  $\text{Kr}^+ + \text{CH}_4$  at Low Collision Energies.  
Papers of the 23rd ASMS Conference, Houston, 1975.
- \*43. A.J. Yencha, V. Pacák, Z. Herman:  
Kinematics of the Reaction  $\text{H}_2\text{O}^+(\text{H}_2,\text{H})\text{H}_3\text{O}^+$ .  
Papers of the 23rd ASMS Conference, Houston, 1975.
44. L. Zülicke, F. Schneider, U. Havemann, Z. Herman, K. Birkinshaw, V. Pacák:  
Quasi-Classical Trajectory Studies and Beam Experiments for the Reactive Process  
 $\text{H}_2^+(\text{He},\text{H})\text{HeH}^+$   
Papers of the 9th ICPEAC, Seattle, 1975 (J.S. Risley and R. Geballe, Eds.), University of Washington Press, 1975, p. 587.
45. F. Schneider, U. Havemann, L. Zülicke, V. Pacák, K. Birkinshaw, Z. Herman:  
Dynamics of the Reaction  $\text{H}_2^+(\text{He},\text{H})\text{HeH}^+$ . Comparison of Beam Experiments with Quasi-Classical Trajectory Studies.  
Chem. Phys. Letters 37, 323 (1976).
46. Z. Herman, V. Pacák, A.J. Yencha, J.H. Futrell:  
Crossed Beam Study of Charge Transfer of  $\text{Ar}^+$  with NO.  
Chem. Phys. Letters 37, 329 (1976).
47. Z. Herman:  
Kinematics of Ion-Molecule Collisions.  
Third Europhysics Study Conference on Atomic and Molecular Physics of Ionized Gases ESCAMPIG, Bratislava, 1976, p. 41.
48. Z. Herman, V. Pacák:  
Production of a  $\text{H}_2^+$  Beam in Selected Vibrational States.  
Int. J. Mass Spectrom. Ion Physics 24, 355 (1977).
49. F. Schneider, U. Havemann, L. Zülicke, Z. Herman:  
Dynamics of the Reaction  $\text{H}_2^+(\text{He},\text{H})\text{HeH}^+$ . Total Cross Sections: Comparison of Quasiclassical Trajectory Results with Molecular Beam Data.  
Chem. Phys. Letters 48, 439 (1977)
50. V. Pacák, U. Havemann, Z. Herman, F. Schneider, L. Zülicke:  
Dynamics of the Reaction  $\text{H}_2^+(\text{He},\text{H})\text{HeH}^+$ . Endoergic Channels with H in  $v = 0,1$  Vibrational States: Beam Experiment and Trajectory Calculations.  
Chem. Phys. Letters 49, 273 (1977).
51. P.M. Hierl, V. Pacák, Z. Herman:  
Kinematics of Charge Transfer:  $\text{Ar}^+ + \text{H}_2$ .  
J. Chem. Phys. 67, 2678 (1977).
52. L. Zülicke, U. Havemann, F. Schneider, Ch. Zuhrt, V. Pacák, Z. Herman:  
Collision-Induced Dissociation of  $\text{H}_2^+$  by He at eV Energies. Crossed-Beam and Trajectory Studies.  
Papers of Xth ICPEAC, Paris, 1977. Commissariat à l'Energie Atomique Paris, p. 24.
53. Z. Herman:  
Dynamics of Reactive and Charge Transfer Collisions between Ions and Molecules.  
Invited Papers and Progress Report of the Xth ICPEAC. Plenum Press, 1977, p. 605-616.
54. A.J. Yencha, V. Pacák, Z. Herman:  
Kinematics of the Reaction  $\text{H}_2\text{O}^+(\text{H}_2,\text{H})\text{H}_3\text{O}^+$ .  
Int. J. Mass Spectrom. Ion Phys. 26, 205 (1978).

55. U. Havemann, V. Pacák, Z. Herman, F. Schneider, Ch. Zuhrt, L. Zülicke:  
 Dissociation in Collisions of  $\text{H}_2^+$  with He in the eV Region. Crossed-Beam Experiments and  
 Quasi-Classical Trajectory Calculations.  
*Chem. Phys.* 28, 147 (1978).
56. Ch. Zuhrt, F. Schneider, U. Havemann, L. Zülicke, Z. Herman:  
 Dynamics of the Reaction  $\text{H}_2^+(\text{He},\text{H})\text{HeH}^+$ . Influence of Various Forms of Reactant Energy on the  
 Total and Differential Cross Section.  
*Chem. Phys.* 38, 205 (1979).
- \*57. B. Friedrich, Z. Herman:  
 Dynamics of the Reaction  $\text{B}^+(\text{H}_2,\text{H})\text{BH}^+$ .  
*Microsymposium on Quantum Chemistry*, Bechyně, 1979. (Papers of the Symposium).
- \*58. Z. Herman, J. Glosík:  
 Kinematics of  $\text{Ar}^+ + \text{H}_2\text{O}$  Collisions: Charge Transfer ( $\text{H}_2\text{O}^+$ ) and Chemical Reaction ( $\text{ArH}^+$ ).  
 Papers of the 28th Annual Conference on Mass Spectrometry, New York City, 1980, ASMS,  
 1980, p. 590.
59. P.M. Hierl, Z. Herman:  
 Crossed Beam Study of the Reaction  $\text{H}_2^+ + \text{D}_2 \rightarrow \text{D}_2\text{H}^+ + \text{H}$ .  
*Chem. Phys.* 50, 249 (1980).
60. Z. Herman:  
 Ion-Molecule Reactions: Collision Dynamics and Energy Partitioning (Progress Report).  
 Papers of the 1st European Conference on Atomic Physics. Heidelberg, 1981. European Physical  
 Society, 1981, p. 65.
61. J. Glosík, B. Friedrich, Z. Herman:  
 A Crossed-Beam of Low Energy  $\text{Ar}^+ + \text{H}_2\text{O}$  Collisions: Charge Transfer and Chemical Reaction.  
*Chem. Phys.* 60, 369 (1981).
62. C.S. Feigerle, Z. Herman, C. Lineberger:  
 Laser Photoelectron Spectrometry of  $\text{Sc}^-$  and  $\text{Y}^-$ : A Determination of the Order of Electron Filling  
 in Transition-Metal Atoms.  
*J. Electron Spectrom. Rel. Phen.* 23, 441 (1981).
- \*63. B. Friedrich, M.J. Henchman, Z. Herman:  
 Kinematics of the Reaction  $\text{CH}_4^+(\text{CH}_4, \text{CH}_3)\text{CH}_5^+$ .  
*Microsymposium on Quantum Chemistry*. Liblice 1981. (Papers of the Symposium.)
64. B. Friedrich, Z. Herman:  
 Dynamics of Ion-Molecule Processes: A Crossed-Beam Study of the Reaction  $\text{B}^+(\text{^3P}) + \text{H}_2 \rightarrow$   
 $\text{BH}^+ + \text{H}$ .  
*Chem. Phys.* 69, 433 (1982).
- \*65. Z. Herman:  
 Ion-Molecule Reaction Dynamics: Its Development in Fifteen Years.  
 Proceedings of the SASP III Meeting, Hintermoos, 1982 (University of Innsbruck, 1982).
- \*66. J.H. Futrell, Z. Herman, B. Friedrich:  
 A Molecular Dynamics Study of the CID Reactions of  $\text{CH}_4^+$  and  $\text{C}_3\text{H}_8^+$  at Electron Volt Collision  
 Energies.  
 Proceedings of the SASP III Meeting, Hintermoos, 1982 (University of Innsbruck, 1982), p. 25.
67. Z. Herman:  
 Ion-Molecule Reactions: Collision Dynamics and Energy Partitioning.  
 in "Mass Spectrometry Advances 1982" (E.R. Schmid, K. Varmuza, I. Fogya, Eds.). Elsevier,  
 1982, p. 293.

68. Z. Herman, U. Havemann, Ch. Zuhrt, L. Zülicke:  
 Dynamik von Elementarprozessen.  
 Film and Education Transparancies for Universities. Institut für Film, Bild und Ton, Berlin, DDR,  
 1982.
69. Z. Herman:  
 Ion-Molecule Reactions: Collision Dynamics and Energy Partitioning.  
*Int. J. Mass Spectrom. Ion Phys.*, 45, 293 (1982).
- \*70. Z. Herman, J.H. Futrell, B. Friedrich:  
 Dynamics of Low Energy CID of Polyatomic Ions.  
 Microsymposium on Quantum Chemistry, Liblice, 1983 (Papers of the Symposium).
71. Z. Herman, J.H. Futrell, B. Friedrich:  
 A Beam Scattering Study of Collision Induced Dissociation of Polyatomic Ions  $\text{CH}_4^+$  and  $\text{C}_3\text{H}_8^+$   
 at eV Collision Energies.  
*Int. J. Mass Spectrom. Ion Physics*, 58, 181 (1984).
72. B. Friedrich, Z. Herman:  
 Processing of Ion-Molecule Beam Scattering Data: Framework of Scattering Diagrams and  
 Derived Quantities.  
*Coll. Czech. Chem. Commun.* 49, 570 (1984).
73. B. Friedrich, Z. Herman:  
 Dynamics of Low Energy Charge Transfer Processes:  $\text{Ar}^{2+} + \text{He} \rightarrow \text{Ar}^+ + \text{He}^+$  at eV Collision  
 Energies.  
*Chem. Phys. Letters*, 107, 389 (1984).
74. B. Friedrich, Z. Havlas, Z. Herman, R. Zahradník:  
 Theoretical Investigation of Mechanismus of Chemical Reactions. (in Czech)  
*Chem. listy* 79, 225 (1985).
75. B. Friedrich, Š Pick, L. Hládek, Z. Herman, E.E. Nikitin, A.I. Reznikov, S.Ya. Umanskij:  
 Dynamics of the Charge Transfer  $\text{Ar}^{2+}(^3\text{P}) + \text{He}(^1\text{S}) = \text{Ar}^+(^2\text{P}) + \text{He}^+(^2\text{S})$  at eV Collision Energies:  
 Comparison of the Experimental Results with Quasi-classical Calculation of the Relative  
 Differential Cross Section.  
*J.Chem. Phys.* 84, 807 (1986).
76. Z. Herman, R. Zahradník:  
 On Lecturing, Lectures and Lecturers (in Czech)  
*Chem. listy* 79, 522 (1985).
77. Z. Herman:  
 Collisional Dynamics of Low Energy Charge Transfer Processes.  
 "Trends in Physics 1984" (Proceedings of the 6th General Conference of the European Physical  
 Society). Edited by J. Janta, J. Pantoflíček; Union of Czechoslovak Mathematicians and Physicists,  
 Prague, 1985, Vol.1, p. 347.
78. B. Friedrich, J. Vančura, M. Sadílek, Z. Herman:  
 A Crossed-Beam Study of the Single-Charge Transfer Process  
 $\text{Hg}^{2+}(^1\text{S}) + \text{Kr}^+(^1\text{S}) = \text{Hg}^+(^2\text{S}) + \text{Kr}^+(^2\text{P}_{3/2,1/2})$  at eV Collision Energies.  
*Chem. Phys. Letters* 120, 243 (1985).
79. B. Friedrich, Š Pick, L. Hládek, Z. Herman, E.E. Nikitin, A.I. Reznikov, S.Ya. Umanskij:  
 Charge Transfer of  $\text{Ar}^{2+}(^3\text{P})$  on He at Low Energies: Quasiclassical Interpretation (in Russian).  
*Khim. fiz.* 5 (1987) 723
- \*80. B. Friedrich, J. Vančura, M. Sadílek, Z. Herman:  
 Study of the Single-Charge Transfer Process  $\text{Hg}^{2+} + \text{Kr}^+ = \text{Hg}^+ + \text{Kr}^+$  at eV Collision Energies.  
 Electronic and Atomic Collisions. Abstracts of Contributed Papers. (14th ICPEAC, Palo Alto,  
 1985). Edited by M.J.Coggiola, D.L.Huestis, R.P.Sexon, p. 482.

- \*81. K. Tanaka, S. Suzuki, I. Koyano, Z. Herman:  
 Selected Cross Sections for Reactions of  $H_2^+$  with He and Ne.  
 Atomic Collision Research in Japan, Progress Report 11. The Society for Atomic Collision Research, Saitama, 1985, p. 102.
- \*82. B. Friedrich, J. Vančura, M. Sadílek, Z. Herman:  
 A Study if the Charge Transfer Process  $Hg^{2+}(^1S) + Kr^+(^1S) = Hg^+(^2S) + Kr^+$  at eV Collision Energies.  
 Microsymposium on Elementary Processes and Chemical Reactivity, Abstracts of Papers, Liblice, 1985 (Czech. Acad. Sci., Prague, 1985) p. 53.
- \*83. Z. Herman, B. Friedrich, I. Koyano, K. Tanaka, T. Kato:  
 Ion-Molecule Collision Dynamics via Beam Scattering and State Selection of Reactants.  
 Microsymposium on Elementary Processes and Chemical Reactivity. Liblice, 1985. Papers of the Conference, Czech.Acad.Sci.,Prague,1985,p.9
84. Z. Herman, M. Horák, A.A. Vlček:  
 New Spectroscopic Methods and Their Application (in Czech)  
*Chem. listy* 80, 422 (1986).
85. M. Baer, S. Suzuki, K. Tanaka, I. Koyano, H. Nakamura, Z. Herman, D. Kouri:  
 He +  $H_2^+$  Ion-Molecule Reaction: A Comparison between Experimental and Quantum-Mechanical Results.  
*Phys. Rev. A*, 34, 1748 (1986).
86. Z. Herman, K. Tanaka, K. Kato, I. Koyano:  
 Internal Energy Dependence of the Relative Cross Sections of the Reaction  $CH_4^+(CH_4, CH_3)CH_5^+$ .  
 Atomic Collision Research in Japan, 12, 61 (1986).
87. K. Tanaka, S. Suzuki, Z. Herman, I. Koyano:  
 Vibrational State-Selected Cross Sections for the Reaction of  $H_2^+$  with He and Ne.  
 Annual Review of the Institute for Molecular Science 1985, p. 82. (Y. Udagawa, Ed.) IMS, Okazaki, 1986.
88. Z. Herman, I. Koyano:  
 Dynamics of Chemical Reactions of Ions from Beam Scattering and State-Selected Studies.  
*J.Chem. Soc., Faraday Trans. II*, 83, 127 (1987)
89. Z. Herman, K. Tanaka, T. Kato, I. Koyano:  
 State Selected Ion-Molecule Reactions by a TESICO Technique: XII. Internal Energy Dependence and Mechanism Branching of the Reaction  $CH_4^+(CH_4, CH_3)CH_5^+$  and its Isotopic Variants.  
*J.Chem. Phys.* 85, 5705 (1986).
90. B. Friedrich, J. Vančura, Z. Herman:  
 Crossed Beam Investigation of the Single-Electron Charge Transfer Process  
 $Kr^{2+} + He \rightarrow Kr^+ + He^+$  at sub-eV Collision Energies.  
*Int. J. Mass Spectrom. Ion Proc.*, 80, 177 (1987).
91. Z. Herman, P. Jonathan, A.G. Brenton J.H. Beynon:  
 Non-Dissociative Single-Electron Capture by  $CO^{2+}$  from Noble Gases.  
*Chem. Phys. Letters* 141, 433 (1987).
92. P. Jonathan, Z. Herman, M. Hamdan, A.G. Brenton:  
 Translational Energy Spectroscopy of the  $NO^{2+}$  Cation.  
*Chem. Phys. Letters* 141, 511 (1987).
93. J. Vančura, B. Friedrich, Z. Herman:  
 Investigation of  $Kr^{2+} + He$  Charge Transfer in Crossed Beams (in Russian)  
*Khim. Fiz.* 6, 1708 (1987).

94. Z. Herman, P. Jonathan, A.G. Brenton, J.H. Beynon:  
 Non-Dissociative Electron Capture by  $\text{NO}^{2+}$  from Noble Gases.  
*Chem. Phys.* 126, 377 (1988).
95. B. Friedrich, Z. Havlas, Z. Herman, R. Zahradník:  
 Theoretical Studies of Reaction Mechanisms in Chemistry.  
*Adv. Quantum Chemistry*. Vol. XIX, p. 247-281. Academic Press, San Diego, 1988.
96. J. Vančura, Z. Herman:  
 Dynamics of the Ion Molecule Reaction  $\text{D}_2\text{O}^+(\text{NH}_3, \text{NH}_2)\text{HD}_2\text{O}^+$  from Crossed Beam Scattering Experiments.  
*Collection Czech. Chem. Commun.* 53, 21168 (1988).
- \*97. Z. Herman:  
 Beam Scattering Studies of Single-Charge Transfer Processes of the Type  $\text{A}^{2+} + \text{B} \rightarrow \text{A}^+ + \text{B}^+$   
*MOLEC VII: Proceedings of the 7th European Conference on Dynamics of Molecular Collisions. Extended Abstracts of Invited Talks.* University of Perugia, 1988, p. 14.
- \*98. Z. Herman:  
 Single-Electron Charge Transfer between Molecular Dications and Atoms:  
 Studies of the  $\text{CO}^{2+} + \text{Ne}$  System.  
*3rd Internat'l. Symposium on Elementary Processes and Chemical Reactivity, Liblice 1989.*  
 J. Heyrovský Institute, 1989, p. 22.
- \*99. M. Sadílek, J. Vančura, Z. Herman:  
 A Crossed Beam Study of the Single-Electron Charge Transfer Process  $\text{N}^{2+} + \text{He} \rightarrow \text{N}^+ + \text{He}^+$ .  
*3rd Internat'l. Symposium on Elementary Processes and Chemical Reactivity, Liblice 1989,*  
 J. Heyrovský Inst., 1989, p. 84.
100. M. Henchman, D. Smith, N.G. Adams, J.F. Paulson, Z. Herman:  
 The Mechanism of the Reaction  $\text{CH}_4^+(\text{CH}_4, \text{CH}_3)\text{CH}_5^+$  as a Function of Energy: Rate Constants and Product Distributions for the Reactions  $\text{CH}_4^+ + \text{CD}_4^+$  and  $\text{CD}_4^+ + \text{CH}_4$  at 80 and 300 K.  
*Int. J. Mass Spectrom. Ion Proc.* 92, 15 (1989)
101. Z. Herman, R. Zahradník:  
 Calculation of Reaction Energies for Ion Molecule Processes of First Row Ions and Their Hydrides.  
*Collection Czech. Chem. Commun.* 54, 2910 (1989).
102. Z. Herman, J. Vančura:  
 Charge Transfer Involving Doubly-Charged Ions: Low Energy Scattering Experiments as a Source of State-to-State Relative Cross Section Data.  
 In "Atomic and Molecular Data for Radiotherapy". International Atomic Energy Agency, Vienna, 1989.
103. Z. Herman, M. Henchman, B. Friedrich:  
 A Beam Scattering Study of the Dynamics of  $\text{CH}_4^+(\text{CH}_4, \text{CH}_3)\text{CH}_5^+$ . Reaction in the eV Collision Energy Range: Three Competing Mechanism of  $\text{CH}_5^+$  Formation.  
*J. Chem. Phys.* 93, 4916 (1990).
104. D. Margreiter, G. Walder, Z. Herman, T.D. Märk:  
 Unimolecular Metastable Decay of Molecular Cluster Ions via Monomer-Fragment Ejection:  
 $((\text{O}_2)_n)^- \rightarrow ((\text{O}_2)_{n-1}\text{O})^- + \text{O}$ .  
*Chem. Phys. Letters* 167, 341 (1990).
105. G. Walder, D. Margreiter, C. Winkler, A. Stamatovic, Z. Herman, T.D. Märk:  
 Metastable Decay of Oxygen Cluster Cations and Anions.  
*J. Chem. Soc. Faraday Transactions* 86, 2395 (1990).
106. M. Sadílek, J. Vančura, M. Fárník, Z. Herman:  
 Beam Scattering Study of the Charge Transfer Process  $\text{N}^{2+}(\text{He}, \text{He}^+)\text{N}^+$  at Low Collision Energies.  
*Int. J. Mass Spectrom. Ion Physics* 100, 197 (1990).

107. M.Fárník, M.Sadílek, J.Vančura, Z.Herman:  
 Charge Transfer Processes between Molecular Ion  $\text{Co}^{2+}$  and Ne.  
 8<sup>th</sup> Symposium on Elementary Processes and Chemical Reactions in Low Temperature Plasma.  
 Stará Lesná 1990.Book of Contributed Papers. Comenian University Press,1990,p.21.
108. J.C. Brenot, M. Durup-Ferguson, J.A. Fayeton, K. Goudjil, Z. Herman, M. Barat:  
 Dynamics of Competing Channels in  $\text{S}^-/\text{H}_2$  Collisional System.  
*Chem. Phys.* 146, 263 (1990).
109. J. Vančura, Z. Herman:  
 Hydroxonium Ion Formation in Collisions of  $\text{H}_2\text{O}^+$ +  $\text{D}_2\text{O}$  and  $\text{D}_2\text{O}^+$  +  $\text{H}_2\text{O}$ : A Crossed-Beam Scattering Study.  
*Chem. Phys.* 151, 249 (1991)
110. A. Hansel, R. Richter, Z. Herman, W. Lindinger:  
 Mobilities of  $\text{Hg}^{++}(^1\text{S})$  and  $\text{Hg}^{++}(^3\text{D})$  Ions Helium.  
*J. Chem. Phys.* 94, 8632 (1991)
111. Z. Herman:  
 Dynamics of Elementary Ion Reactions: Influence of Initial Reactant Energy on Reaction Mechanism.  
 Habilitation. Faculty of Natural Sciences., Charles University, 1991
- \*112. Z. Herman, M. Sadílek:  
 Ion Molecule Reaction Dynamics: Recent Scattering Studies of  $\text{C}_3\text{HD}^+$  and  $\text{C}_3\text{D}_2^+$  Formation in  $\text{C}_3\text{H}^+ + \text{D}_2$  Collisions.  
 Elementary Processes in Clusters, Lasers and Plasmas (Proceedings of the Pentagonale Workshop EPCLP 91; Kühlei, Austria, T.D. Märk, R. Schriftwieser, Eds., Universität Innsbruck, 1991, p. 203.(Invited talk).
113. M. Sadílek, J. Vančura, Z. Herman:  
 A Crossed Beam Study of the Reaction  $\text{NH}^+ + \text{D}_2 \rightarrow \text{NHD}^+ (\text{ND}_2^+) + \text{D(H)}$  at 1.3 eV Collision Energy.  
 Elementary Processes in Clusters, Lasers and Plasmas (Proceedings of the Pentagonale Workshop EPCLP 91; Kühlei, Austria, T.D. Märk, R. Schriftwieser, Eds., Universität Innsbruck, 1991,p.240.
114. A. Hansel, R. Richter, Z. Herman, W. Lindinger:  
 Mobilities of  $\text{Hg}^{++}$  Ions in Helium.  
 Elementary Processes in Clusters, Lasers and Plasmas (Proceedings of the Pentagonale Workshop EPCLP 91; Kühlei, Austria, T.D. Märk, R.R.W. Schriftwieser, Eds., Universität Innsbruck, 1991 p.197.
115. G. Walder, D. Margreiter, C. Winkler, V. Grill, T. Rauth, P. Scheier, A. Stamatovic, Z. Herman, M. Foltin, T.D. Mark:  
 Production and Stability of Oxygen Cluster Cations and Anions Revisited.  
*Z. Phys. D - Atoms,Molecules,Clusters* 20, 201 (1991)
116. M. Foltin, V. Grill, T.Rauth, Z.Herman, T. Märk:  
 A Slow Metastable Decay Process of  $\text{C}_3\text{H}_7^+(\text{C}_3\text{H}_8)^+$  Cluster Ions Induced by Isomerization of the Propyl Ion.  
*Phys. Rev. Letters* 68, 2019 (1992).
- \*117. M.Fárník, Z.Herman:  
 Charge Transfer Processes of Doubly Charged Molecular Ions.  
 European Meeting on Photons, Beams and Chemical Dynamics. Book of Abstracts. Paris-Orsay, 1992,p.102.
118. M. Šolc, Z. Herman:  
 Does a Molecule Remember the Way it was Energized?  
*Coll. Czech. Chem. Commun.* 57, 1157 (1992).

119. A. Hansel, R. Richter, W. Lindinger, Z. Herman:  
 Charge Transfer between  $\text{Hg}^{++}$  and Ar or Kr: Reaction Rates of Various State-to-State Processes from SIFDT Studies and Beam Experiments.  
*Int. J. Mass Spectrom. Ion Proc.* 117, 213 (1992)
120. M. Sadílek, Z. Herman:  
 A Crossed Beam Study of D Atom Transfer in Collisions of  $\text{C}_3\text{H}^+$  and  $\text{D}_2$  at Collision Energies 0.33 - 1.45 eV.  
*J. Phys. Chem.* 97, 2147 (1993)
- \*121. M.Fárník, J.Vančura, Z.Herman:  
 Non-Dissociative Charge Transfer between Doubly-Charged Molecular Ions and Atoms.  
 9<sup>th</sup> European Conference on Dynamics of Molecular Collisions Molec IX, Prague, 1992. Book of Abstracts, p. 226.
122. M.Fárník, Z.Herman, T.Ruhaltinger, J.P.Toennies, R.G.Wang:  
 Single-Electron Charge Transfer between  $\text{He}^{2+}$  and NO. Population of Vibrational States of  $\text{NO}(^1\Sigma^+)$  Product from High-Resolution Scattering Experiments.  
*Chem. Phys. Letters* 206, 376 (1993).
- \*123. Z. Herman:  
 Reactive Scattering of Ions: Have the Expectations of the Sixties been Fulfilled?  
 Papers of the 15th International Symposium on Molecular Beams, Berlin 1993 (invited Talk), TU Berlin, 1993, p.I.17.
- \*124. M.Fárník, Z.Herman, J.P.Toennies, R.G.Wang:  
 Charge Transfer between  $\text{He}^{2+}$  and NO. Population of Vibrational States of  $\text{NO}(^1\Sigma^+)$  Product.  
 Papers of the 15th International Symposium on Molecular Beams, Berlin 1993. Book of Abstracts. TU Berlin, 1993, p.E.4.
125. Ch.Berg, W.Wachter, T.Schindler, Ch.Kronseder, G.Niedner-Schatteburg, V.E.Bondybey,  
 Z.Herman:  
 Use of Isotopic Labelling in Establishing Reaction Mechanism:  $\text{CD}_3^+ + \text{C}_2\text{H}_6$ .  
*Chem. Phys. Letters* 216, 465 (1993)
126. M.Fárník, Z.Dolejšek, Z.Herman, V.E.Bondybey:  
 Beam Scattering Investigation of Hydride-Ion Transfer Processes: Reaction of  $\text{CH}_3^+$  and  $\text{CD}_3^+$  with  $\text{C}_2\text{H}_6$ .  
*Chem.Phys. Letters* 216, 458 (1993).
127. Z.Herman, K.Birkinshaw, V.Pacák:  
 A Beam Scattering Study of Non-Dissociative Charge Transfer between  $\text{Kr}^+$  and  $\text{CH}_4$  at Collision Energies below 1 eV.  
*Int.J.Mass Spectrom. Ion Proc.* 135, 47 (1994).
- \*128. Z.Herman:  
 Dynamics of Hydride-Ion Transfer Reactions.  
 Book of Abstracts, 10th European Conference on Dynamics of Molecular Collisions MOLEC X, Salamanca 1994, p.16 (invited lecture). (Universidad de Salamanca, 1994).
- \*129. Z.Herman, K.Birkinshaw, V.Pacák:  
 Non-Dissociative Charge Transfer between  $\text{Kr}^+$  and  $\text{CH}_4$  Collision Energies below 1 eV:  
 A Crossed Beam Scattering Study.  
 Contributions of the Symposium on Atomic, Cluster and Surface Physics SACSP'94, (T.D.Märk, R.Schrittwieser, D.Smith.,Eds.); University of Innsbruck, 1994, p.188.
- \*130. M.Fárník, Z.Herman, T.Ruhaltinger, J.P.Toennies:  
 Single Electron Charge Transfer between  $\text{He}^{2+}$  and Simple Molecules at  $E(\text{He}^{2+})=70$  eV:  
 Population of Vibrational States of the Molecular Product Ion.  
 Contributions of the Symposium on Atomic, Cluster and Surface Physics SACSP'94, (T.D.Märk,

R.Schrittwieser, D.Smith.,Eds.); University of Innsbruck,1994, p.192.

\*131. Z.Dolejšek, M.Fárník, Z.Herman:

Dynamics of H<sup>-</sup>-Transfer Reactions and Related Processes in Collisions of CH<sub>3</sub><sup>+</sup> with Ethane and Propane Studied by Crossed Beam Scattering and D-Labelling.  
Contributions of the Symposium on Atomic, Cluster and Surface Physics SACSP'94,  
(T.D.Märk, R.Schrittwieser, D.Smith.,Eds.); University of Innsbruck,1994, p.195.

132. Z. Herman, T. D. Märk, L. Sanche:

Collision processes between ions and excited neutrals and surrounding molecules  
Chapter 6 in "Atomic and molecular data for radiotherapy and radiation research", IEAE-TECDOC-799, International Atomic Energy Agency, 1995, p. 371-414.

133. Z.Dolejšek, M.Fárník, Z.Herman:

Dynamics of Chemical Reactions of Doubly-Charged Ions: CF<sub>2</sub>D<sup>+</sup> Formation in Collisions of CF<sub>2</sub><sup>2+</sup> and D<sub>2</sub>.  
Chem.Phys.Lett.235,99(1995)

134. Z.Herman, B.Friedrich:

A Crossed Beam Scattering Study of CH<sub>4</sub><sup>+</sup> and CH<sub>3</sub><sup>+</sup> Formation in Charge Transfer Collisions of Kr<sup>+</sup> with CH<sub>4</sub> at about 1 eV.  
J.Chem.Phys.102,7017(1995).

135. M.Fárník, Z.Herman, T.Ruhaltinger, J.P.Toennies:

Single-Electron Transfer in Collisions of He<sup>2+</sup> with NH<sub>3</sub> and H<sub>2</sub>S. Vibrational State Populations of NH<sub>3</sub><sup>+</sup> and H<sub>2</sub>S<sup>+</sup>.  
J.Chem.Phys.,103,3495(1995).

136. J. Žabka, M.Fárník, Z.Dolejšek, J.Poláč, Z.Herman:

Dynamics of the Hydride Ion Transfer between CD<sub>3</sub><sup>+</sup> and CH<sub>4</sub>. A Crossed Beam Scattering Study.  
J.Phys.Chem.,99,15595(1995).

137. M.Foltin, Z.Herman, T.D.Märk:

Metastable Decay of Propane CH<sub>3</sub>CD<sub>2</sub>CH<sub>3</sub> and Argon/Propane Cluster Ions Induced by Isomerization of the Propyl Ion Core and Fragmentation Patterns of Propane Ions in the Cluster Environment.  
Int.J.Mass Spectrom.Ion Processes,149/150,415(1995)

138. B.Friedrich, Z.Herman, D.R.Herschbach:

Michael Henchman, Dynamic Explorer.  
Int. Reviews Phys. Chem. 15, 1-12 (1996).

139. Z.Herman:

Dynamics of Charge Transfer and Chemical Reactions of Doubly-Charged Ions at Low Collision Energies.  
Int. Reviews Phys. Chem. 15, 299-324 (1996).

140. O.Dutuit, H.Palm, D.Berthomieu, Z.Herman:

Reactions of H<sup>-</sup>, D<sup>-</sup>, and HD<sup>-</sup> Transfer between Ethylene Cation and Propane CH<sub>3</sub>CD<sub>2</sub>CH<sub>3</sub>: A Study of Kinetics Using State Selected Reactants.  
Chem. Phys. 209, 259 (1996).

\*141. Z.Herman, Z.Dolejšek, M.Fárník, J.Zabka:

Dynamics of Electron Transfer and Chemical Reactions of Molecular Dications.  
11<sup>th</sup> European Conference on Dynamics of Molecular Collisions MOLEC XI. Nyborg,1996. Book of Abstracts, University of Copenhagen, 1996, p. B9.

142 J.Hrušák, J.Žabka, Z.Dolejšek, Z.Herman:

A DHT/HF Study of the Potential Energy Surface of the Protonated Ethane C<sub>2</sub>H<sub>7</sub><sup>+</sup>.  
Int. J. Mass Spectrom. Ion Proc. 167/168, 675-688 (1997)

143. A.Ehbrecht, N.Mustafa, Ch.Ottinger, Z.Herman:  
 Luminescent Charge Transfer in a Beam of  $\text{CO}^{2+}$  Colliding with Ar, N<sub>2</sub>, H<sub>2</sub>, D<sub>2</sub> and CO.  
*J. Chem. Phys.* 105, 9833-9946 (1996).
144. R.Wörgötter, V.Grill, Z.Herman, H.Schwarz, T.D.Märk:  
 Low Energy Reactive and Dissociative Collisions of an Acetone Cation  $\text{CH}_3\text{COCH}_3^+$  and its Fragment  $\text{CH}_3\text{CO}^+$  with a Surface.  
*Chem. Phys. Letters*, 270, 333-338 (1997).
145. Z.Herman:  
 Dynamics of Elementary Chemical Reactions of Ions (in Czech)  
*Chem.listy* 91, 533-546(1997).
146. Z.Herman, Z.Dolejšek, M.Fárník, J.□abka:  
 Chemical Reactions and Charge Transfer Processes of Molecular Dications:  
 Dynamics of  $\text{CF}_2^{2+} + \text{D}_2$ , H<sub>2</sub>, Ar, Ne from Beam Scattering.  
 20th International Conference on the Physics of Electronic and Atomic Collisions. Scientific Program and Book of Abstracts (F.Aumayr, G.Betz, H.-P.Winter,Eds.), TU Wien, Vol.II,MO183.
- \*147. Z.Herman:  
 Dynamics of Ion-Molecule Reactions: Product Angular Distributions and Structure of Dissociating Complexes.  
 Papers of SASP 98 (Symposium on Atomic and Surface Physics and Related Topics),(A.Hansel, W.Lindinger,Eds.), Going, 1998, p.3-18.
148. C.Mair ,T.Fiegele, F.Biasioli, R.Wörgötter, V.Grill, Z.Herman, H.Schwarz, T.D.Märk:  
 High Resolution, Low Energy Cluster Ion/Surface Collisions: Prototypical Studies Involving Acetone Clusters and Fullerenes.  
 Papers of SASP 98 (Symposium on Atomic and Surface Physics and Related Topics),(A.Hansel, W.Lindinger,Eds.), Going,1998,p.4-132.
149. R.Wörgötter, J.Kubišta, J.Zabka, Z.Dolejšek, T.D. Märk, Z.Herman:  
 Surface Induced Reactions and Decompositions of the Benzene Molecular Ion: Product Ion Intensities, Angular and Translational Energy Distributions.  
 Papers of SASP 98 (Symposium on Atomic and Surface Physics and Related Topics),(A.Hansel, W.Lindinger,Eds.), Going,1998,p.4-136.
150. Z.Herman:  
 Dynamics of Ion-Molecule Reactions.  
 European Winter School on "Structure and Reactivity of Molecular Ions". Lecture Notes. TMR European Programme and INFM Universita di Trento, Universita di Trento Press, 1998.
- \*151. Z.Herman:  
 Angular and Translational Energy Distributions of Products of Polyatomic and Cluster Ion Collisions with Surfaces.  
 European Research Conference "Cluster-Surface Interactions".Invited Lectures. (S.Matt, T.D.Märk, K.-H.Meiwes-Broer,Eds.). University of Innsbruck,1998,p.40.
152. R.Wörgötter, J.Kubišta, J.Zabka, Z.Dolejšek, T.D. Märk, Z.Herman:  
 Surface Induced Reactions and Decompositions of the Benzene Molecular Ion  $\text{C}_6\text{H}_6^+$ : Product Intensities, Angular and Translational Energy Distributions.  
*Int.J.Mass Spectrom.Ion Proc.*,**174**, 53-62(1998).
153. C.Praxmarer, A.Hansel, W.Lindinger, Z.Herman:  
 A SIFDT Study of Charge Transfer Processes between Atomic, Molecular and Dimer Ion Projectiles and Polyatomic Molecules Ethane, Propane and n-Butane.  
*J.Chem.Phys.*,**109**,4246-4251(1998)

154. C.Mair, T.Fiegele, R.Wörgötter, V.Grill, Z.Herman, H.Schwarz, T.D. Märk:  
High Resolution, Low Energy Ion/Surface Collisions: Prototypical Studies Involving  
Hydrocarbon Ions.  
in "Syntheses and Methodologies in Inorganic Chemistry", Vol.8 (1998), p. 175-178.
155. Z. Herman:  
Dynamics of Reactions of Doubly-Charged Ions.  
12<sup>th</sup> European Conference on Dynamics of Molecular Collisions MOLEC XII, Bristol. Invited Lecture. Conference Programme and Abstracts, University of Bristol, 1998, p.16.
156. J. Žabka, Z.Dolejšek, I.Koyano, Z.Herman:  
Dynamics of Protonated Acetonitrile Formation in  $\text{CD}_3\text{CN}^+$ +  $\text{CH}_3\text{CN}$  Collisions:  
A Crossed-Beam Scattering Study.  
Collection Czech.Chem.Commun. **63**, 1152-1160(1998).
157. J.Kubišta, Z.Dolejšek, Z.Herman:  
Energy Partitioning in Collisions of Slow Polyatomic Ions with Surfaces: Ethanol Molecular Ions on Stainless Steel Surfaces.  
European Mass Spectrom. **4**, 311-320(1998).
158. J. Žabka, Z.Herman:  
Single-Electron Charge Transfer in Collisions of  $\text{CF}_2^{2+}$  with Ar and Ne at Collision Energies 3-5 eV.  
Czech J.Phys.**49**,373-382(1999).
159. J. Žabka, Z. Dolejšek, J. Hrušák, Z. Herman:  
A Crossed Beam Scattering Study of Reactions in the System Acetylene Cation - Acetylene:  
Formation of  $\text{C}_2\text{HD}^+$  in  $\text{C}_2\text{D}_2^+$ +  $\text{C}_2\text{H}_2$  and Formation of  $\text{C}_4\text{H}_3^+$  and  $\text{C}_4\text{H}_2^+$  in  $\text{C}_2\text{H}_2^+$ +  $\text{C}_2\text{H}_2$   
Collisions.  
Int. J. Mass Spectrom. **185/186/187**, 195-205 (1999).
- 160 C.Mair, T.Fiegele, F.Biasioli, J.H.Futrell, Z.Herman, T.D.Märk:  
Surface-Induced Chemical Reactions of Cluster Ions: Competitive Processes of Protonated Acetone Formation in Acetone Dimer - Surface Collisions  
Int.J.Mass.Spetrom. **188**, L1 (1999).
161. C.Mair, T.Fiegele, F.Biasioli, Z.Herman, T.D.Märk:  
Surface-Induced Reactions of Acetone Cluster Ions.  
J.Chem.Phys.**111**, 2770-2778(1999).
162. Z.Herman, J.Žabka, Z.Dolejšek, M.Fárník,:  
Dynamics of Chemical Reactions of Molecular Dications: Beam Scattering and Integral Cross Section Data on  $\text{CF}_2\text{D}^+(\text{CF}_2\text{H}^+)$ ,  $\text{CF}_2^+$ , and  $\text{CF}^+$  Formation in  $\text{CF}_2^{++}$  +  $\text{D}_2(\text{H}_2)$  Collisions.  
Int.J.Mass Spectrom. **192**, 191-203 (1999).
163. J.Hrušák, Z.Herman, S.Iwata:  
Heat of Formation of the  $\text{SiF}_2^{++}$  Dication: A Theoretical Prediction.  
Int. J.Mass Spectrom. **192**, 165-171 (1999).
164. W. Lindinger, A.Hansel, Z. Herman:  
Ion-Molecule Reactions  
Advances in Atomic, Molecular and Optical Physics, Vol.**43**, p.243-294, (K.Becker, M.Inokuti, Eds.), Academic Press, 2000.
165. J.Žabka, O.Dutuit, Z.Dolejšek, J.Poláč, Z.Herman:  
A Crossed Beam Study of the Dynamics of  $\text{C}_2\text{H}_3^+$  Formation in Reaction of  $\text{C}_2\text{H}_2^+$  with Methane.  
Phys.Chem.Chem.Phys., **2**, 781 (2000).
166. J.Hrušák, Z.Herman, N.Sändig, W.Koch:  
The Heat of Formation of the  $\text{CF}_2^{2+}$  Dication: A Theoretical Estimation.  
Int.J.Mass Spectrom. **201**,269-275(2000).

- 167 Z.Herman:  
 Energy Transfer in Particle-Surface Collisions  
 in "Thermodynamics of Energy Conservation and Transport" (S.Sieniutycz, A.DeVos, Eds.),  
 Springer Verlag, New York, 2000, p. 239-254.
168. F.Biasioli, T.Fiegele, C.Mair, Z.Herman, O.Echt, F.Aumayr, H./P.Winter, T.D.Märk:  
 Surface-induced dissociation of singly- and multiply-charged fullerene ions  
*J. Chem. Phys.* **113**, 5053-5057(2000)
169. O. Echt, F. Biasioli, T. Fiegele, C. Mair, Z. Herman, P. Scheier, T.D. Märk:  
 Surface-induced reactions of singly – and multiply charged parent and fragment ions of C<sub>60</sub>,  
*Cluster and Nanostructure Interfaces*, P. Jena et al. Eds., World Scientific (2000) 449-454
170. L. Mrázek, J. Žabka, Z. Dolejšek, J. Hrušák, Z. Herman:  
 Dynamics of chemical and charge transfer reactions of molecular dication: III. Beam scattering  
 and total cross section data for processes in the system CO<sub>2</sub><sup>2+</sup> + D<sub>2</sub>.  
*J.Phys. Chem.* **104**, 7294-7303 (2000)
171. Z. Herman:  
 Energy partitioning in doubly-charged ion - neutral charge transfer processes involving  
 molecular dication  
*Physics Essays* **13**, 480-488 (2000).
172. J.J.Gilligan, Z. Herman, A.W. Castleman:  
 Associative ionization of excited sodium species with various ligands: Assessing relative bonding  
 strengths of ion-ligand interactions.  
*Int. J. Mass Spectrom.* **204**, 247-253 (2001)
173. A. Wittemann, M. Sadílek, J. Poláč, E. Teloy, Ch. Schlier, Z. Herman:  
 Crossed beam scattering studies of the dynamics of the reaction NH<sup>+</sup>(D<sub>2</sub>;H,D)NHD<sup>+</sup>,ND<sub>2</sub><sup>+</sup>.  
*Z. Physik..Chem.* **215**, 749-764 (2001).
- 174.. Z. Herman:  
 The Crossed-Beam Scattering Method in Studies of Ion-Molecule Reaction Dynamics.  
*Int. J. Mass. Spectrom.* **212**, 413-443 (2001).
175. J. Žabka, Z. Dolejšek, J. Roithová, V. Grill, T.D. Märk, Z. Herman:  
 Energy partitioning in collisions of slow polyatomic ions with carbon surfaces  
*Int.J. Mass Spectrom.* **213**, 145-156(2002).
176. J. Žabka, Z. Dolejšek, Z. Herman:  
 Energy partitioning in collisions of slow polyatomic ions with surfaces: Ethanol molecular ions  
 on surfaces covered by self-assembled monolayers (CF-SAM, CH-SAM, COOH-SAM).  
*J. Phys. Chem. A* **106**, 10861-10869 (2002).
177. Ch. Mair, J. Roithová, J. Fedor, M. Lezius, Z. Herman, T.D. Märk:  
 Surface collisions of the acetonitrile molecular ion: Evidence for isomerization of CD<sub>3</sub>CN<sup>+</sup> to  
 the Ketenimine cations CD<sub>2</sub>=CND<sup>+</sup>.  
*Int. J. Mass spectrom.* **223-224**, 279-290 (2003).
178. J. Roithová, J. Žabka, Z. Dolejšek, Z. Herman:  
 Collisions of slow polyatomic ions with surfaces: Dissociation and chemical reactions of CD<sub>5</sub><sup>+</sup>,  
 CD<sub>4</sub><sup>+</sup>, and CD<sub>3</sub><sup>+</sup> and their isotopic variants on room-temperature and heated carbon surfaces.  
*J. Phys. Chem. B*, **106**, 8293-8301 (2002)

179. C. Mair, Z. Herman, J. Fedor, M. Lezius, T.D. Märk:  
 Surface induced dissociations and reactions of acetonitrile monomer, dimer and trimer ions.  
*J. Chem. Phys.* **118**, 1479 (2003).
180. C. Mair, M. Lezius, Z. Herman, T.D. Märk:  
 Surface induced dissociations of protonated ethanol monomer, dimer, and trimer ions:  
 Monomer binding energy and trimer break-down graph.  
*J. Chem. Phys.* **118**, 7090-96 (2003).
181. C. Mair, J. Fedor, M. Lezius, P. Scheier, M. Probst, Z. Herman, T.D. Märk:  
 Surface-induced reactions and dissociations of small acetone, acetonitrile and ethanol cluster  
 ions: Competitive chemical reactions, dissociation mechanisms and determination of binding  
 energy.  
*New Journal of Physics* **5**, 9.1-9.18 (2003).
182. K. Gluch, J. Fedor, S. Matt-Leubner, R. Parajuli, C. Mair, A. Stamatovic, O. Echt, C. Lifshitz, J.  
 Harvey, F. Hagelberg, Z. Herman, M. Probst, P. Scheier, T.D. Märk:  
 Energetics and dynamics of decaying cluster ions  
*Eur. Phys. J. D* **24**, 131-136 (2003).
183. L. Mrázek, J. Žabka, Z. Dolejšek, Z. Herman:  
 Charge transfer between  $\text{CO}_2^{2+}$  and Ar and Ne at collision energies 3-10 eV.  
*Collection Czech. Chem. Commun.* **68**, 178-188 (2003).
184. J. Roithová, R. Thissen, J. Žabka, P. Franceschi, O. Dutuit, Z. Herman:  
 Reactions of molecular dications: Collision energy dependence of integral cross sections of  
 processes in  $\text{CHCl}^{2+} + \text{Ar}, \text{D}_2$  systems from guided beam studies  
*Int. J. Mass Spectrom.* **228**, 487-495 (2003)
- 185.. J. Roithová, J. Hrušák, Z. Herman:  
 A theoretical study of the ground and excited states of the  $\text{CHCl}^{2+}$  dication and the  $\text{CHCl}^+$  cation.  
*Int. J. Mass Spectrom.* . **228**, 497-506 (2003)
186. P. Franceschi, R. Thissen, J. Žabka, J. Roithová, Z. Herman, O. Dutuit:  
 Internal energy effects in the reactivity of the  $\text{CO}_2^{2+}$  doubly charged molecular ion with  $\text{CO}_2$  and  
 $\text{CO}$ .  
*Int. J. Mass Spectrom.* **228**, 507-516 (2003).
187. J. Roithová, J. Žabka, J. Hrušák, R. Thissen, Z. Herman:  
 Dynamics of chemical and charge transfer reactions of molecular dications: IV. Proton transfer  
 and reactions of dication isomers in the system  $\text{CHCl}^{2+} + \text{D}_2$ .  
*J. Phys. Chem. A* **107**, 7347-54 (2003).
188. . J. Roithová, J. Žabka, J. Hrušák, R. Thissen, Z. Herman:  
 Dynamics of chemical and charge transfer reactions of molecular dications: V. An experimental  
 and theoretical study of reactions between  $\text{CHCl}^{2+}$  and Ar, Kr, and Xe.  
*Phys. Chem. Chem. Phys.* **5**, 2988-2995 (2003).
189. D. Schröder, J. Loos, H. Schwarz, R. Thissen, J. Roithová, Z. Herman:  
 Does ionized diacetylene have a positive proton affinity?  
*Int. J. Mass Spectrom.* **230**, 113-121 (2003).
190. J. Roithová, J. Hrušák, Z. Herman:  
 An ab initio study of the potential energy surface of the reaction  $\text{CHCl}^{2+} + \text{H}_2$  and comparison  
 with experimental data.  
*J. Phys. Chem. A* **107**, 7355-63 (2003).

191. A. Qayyum, T. Tepnual, C. Mair, S. Matt-Leubner, P. Scheier, Z. Herman, T.D. Märk:  
The role of internal energy of polyatomic projectile ions in surface induced dissociations.  
*Chem. Phys. Lett.* **376**, 539-547 (2003).
192. Z. Herman  
Collisions of slow polyatomic ions with surfaces: The scattering method and results  
*J. Am. Soc. Mass Spectrom.* **14**, 1360-1372 (2003).
- 193.. A. Qayyum, Z. Herman, T. Tepnual, C. Mair, S. Matt-Leubner, P. Scheier, T.D. Märk:  
Surface induced dissociation of polyatomic hydrocarbon projectile ions with different initial  
internal energy content.  
*J. Phys. Chem. A* **108**, 1-8 (2004).
194. Z. Herman:  
Surface collisions of small cluster ions at incident energies 10-10<sup>2</sup> eV.  
*Int. J. Mass Spectrom.* **233**, 361-371 (2004)
195. Z. Herman, A. Stamatovic, A. W. Castleman:  
Foreword to Special Issue of IJMS to honor T.D. Mark  
*Int. J. Mass Spectrom.* **233**, ix-x (2004)
196. T. Tepnual, L. Feketeova, V. Grill, P. Scheier, Z. Herman, T.D. Märk:  
Surface collisions of formic acid cations HCOOH<sup>+</sup> and DCOOD<sup>+</sup> with hydrocarbon-covered  
stainless steel surface.  
*Int. J. Mass Spectrom.* **244**, 164-170 (2005)
197. Z. Herman, T.D. Märk:  
Collisions of hydrocarbon ions of energies 10-50 eV with carbon surfaces: Ion survival,  
dissociation, chemical reactions, scattering.  
in "Data for molecular processes in edge plasmas", I.A.E.A. TechDoc., I.A.E.A. Vienna
198. Z. Herman:  
Studies of hydrocarbon ion collisions with carbon surfaces at IPP.CR.  
EFDA Newsletter ,Vol 2005/3, p.7 (June 5, 2005)
199. N. Lambert, N. Kaltsoyannis, S.D. Price, J. Žabka, Z. Herman:  
Bond-forming reactions of dications with molecules: A computational and experimental study of  
the mechanisms for the formation of HCF<sub>2</sub><sup>+</sup> from CF<sub>3</sub><sup>2+</sup> and H<sub>2</sub>.  
*J. Phys. Chem. A* **110**, 2898-2905 (2006) (J. Troe Honorary Issue)
200. J. Jašík, J. Žabka, L. Feketeová, I. Ipolyi, T.D. Märk, Z. Herman:  
Collisions of slow polyatomic ions with surfaces: Dissociation and Chemical Reactions of C<sub>2</sub>H<sub>2</sub><sup>+</sup>,  
C<sub>2</sub>H<sub>3</sub><sup>+</sup>, C<sub>2</sub>H<sub>4</sub><sup>+</sup>, C<sub>2</sub>H<sub>5</sub><sup>+</sup> and their deuterated variants C<sub>2</sub>D<sub>2</sub><sup>+</sup> and C<sub>2</sub>D<sub>4</sub><sup>+</sup> on room-temperature and  
heated carbon surfaces.  
*J. Phys. Chem. A* **109**, 10208-10215 (2005).
201. Z. Herman, P. Španěl, M. Polášek, J. Roithová:  
Ion chemistry in the gaseous phase and in collisions with surfaces (in Czech)  
*Czech J. Phys.* **55**, 591 (2005)
202. J. Roithová, Z. Herman, D. Schröder, H. Schwarz:  
Competition of proton- and electron transfers in gas-phase reactions of hydrogen-containing  
dications CHX<sup>2+</sup> (X=F,Cl,Br,I) with atoms, non-polar and polar molecules.  
*Chem. Eur. J.* **12**, 2465-2471 (2006)
203. J. Jašík, J. Roithová, J. Žabka, A. Pysanenko, L. Feketeová, I. Ipolyi, T.D. Märk, Z. Herman:  
Surface-induced dissociation of dications and cations: Collisions of dications C<sub>7</sub>H<sub>8</sub><sup>2+</sup>, C<sub>7</sub>H<sub>7</sub><sup>2+</sup>  
and C<sub>7</sub>H<sub>6</sub><sup>2+</sup> and a comparison with the respective cations C<sub>7</sub>H<sub>8</sub><sup>+</sup> and C<sub>7</sub>H<sub>7</sub><sup>+</sup>.  
*Int. J. Mass Spectrom.* **249-250**, 162-170 (2006).

204. J. Jašík, J. Roithová, J. Žabka, R. Thissen, I. Ipolyi, Z. Herman:  
 Dynamics of chemical and charge transfer reactions of molecular dication: VI. Reactions of  $C_4H_3^{2+}$  with Kr, Xe, H<sub>2</sub>, N<sub>2</sub>, NO, NH<sub>3</sub>, C<sub>2</sub>H<sub>2</sub> and CH<sub>4</sub>.  
*Int. J. Mass Spectrom.* **255-256**, 150-163 (2006).
205. R. Zahradník, Z. Herman:  
 On lectures, lecturing and lecturers after 20 years (in Czech: O přenáškách, přednášení a přednášejících po dvaceti letech)  
*Chem. Listy* **100**, 283-310 (2006).
206. J. Roithová, J. Žabka, Z. Herman, R. Thissen, D. Schröder, H. Schwarz:  
 Reactivity of the CHBr<sup>2+</sup> dication toward molecular hydrogen  
*J. Phys. Chem. A* **110**, 6447-6453 (2006).
207. J. Horáček, Z. Herman:  
 Physicist George Jiří Schulz (in Czech)  
*Čs. čas. fyz. (Czech J. Physics)* **56**, 375 (2006).
208. L. Feketeová, T. Tepnual, V. Grill, P. Scheier, J. Roithová, Z. Herman, T.D. Märk :  
 Surface-induced dissociation and reactions of cations and dications  $C_7H_8^{+/2+}$ ,  $C_7H_7^{+/2+}$ , and  $C_7H_6^{2+}$ : Dependence of mass spectra of product ions on incident energy of the projectiles.  
*Int. J. Mass Spectrom.* **265**, 337-346 (2007)
209. A. Pysanenko, J. Žabka, F. Zappa, T.D. Märk , Z. Herman:  
 Scattering of very slow (3-10 eV) hydrocarbon ions  $CD_3^+$ ,  $CD_4^+$ , and  $CD_5^+$  from room-temperature carbon (HOPG) surfaces  
*Int. J. Mass Spectrom.* **273**, 35-47 (2008).
210. C.L. Ricketts, D. Schroeder, J. Roithova, H. Schwarz, R. Thissen, O. Dutuit, J. Zabka, Z. Herman, S.D. Price:  
 Competition of electron transfer, dissociation and bond-forming reactions in the reaction of the CO<sub>2</sub><sup>2+</sup> dication with neutral CO<sub>2</sub>.  
*Phys.Chem. Chem. Phys.* **10**, 5135 (2008).
211. A. Pysanenko, J. Žabka, T.D. Märk , Z. Herman:  
 Collisions of slow hydrocarbon ions  $CD_4^+$ ,  $CD_5^+$ ,  $C_2D_4^+$ , and  $C_2H_5^{+-}$  with room temperature and heated tungsten surfaces  
*Int. J. Mass Spectrom.* **277**, 229-235 (2008)
212. A. Pysanenko, J. Žabka, Z. Herman:  
 Scattering of low energy (5-12 eV)  $C_2D_4^+$  ions from room temperature carbon (HOPG) surfaces  
*Collection Czech Chem. Commun.* **73**, 755-770 (2008).
213. L. Feketeová, V. Grill, F. Zappa, N. Endstrasser, B. Rasul, Z. Herman, P. Scheier, T.D. Märk:  
 Charge exchange, surface-induced dissociation and reactions of doubly-charged molecular ions SF<sub>4</sub><sup>2+</sup> upon impact on a stainless steel surface: A comparison with surface-induced dissociation of singly-charged SF<sub>4</sub><sup>+</sup> molecular ions.  
*Int. J. Mass Spectrom.* **276**, 37-42 (2008).
214. P. Franceschi, R.Thissen, O. Dutuit, C. Alcaraz, H. Soldi-Lose,D. Bassi, D. Ascenzi, P. Tosi, J. Žabka, Z. Herman, M. Coreno, M.de Simone:  
 State-specific reactions and autionization dynamics of Ar<sup>2+</sup> produced by synchrotron radiation  
*Int. J. Mass Spectrom.* **280**, 119-127 (2009).
215. A. Pysanenko, J. Žabka, L. Feketeová, T.D. Märk , Z. Herman:  
 Collisions of slow ions  $C_3H_n^+$  and  $C_3D_n^+$  (n=2-8) with room-temperature carbon surfaces: Mass spectra of product ions and survival probability of the projectile ions.  
*Eur. J. Mass Spectrom.* **14**, 335-343 (2008).

216. Z. Herman, V. Hanuš:  
 Dr. Miroslav Ryska: Biographical Notes  
*Eur. J. Mass Spectrom.* **14**, v-vi (2008).
217. . Z. Herman:  
 Survival probabilities of slow ions in collisions with room-temperature and heated surfaces of carbon, tungsten, and beryllium  
 in “Atomic and Molecular Data for Plasma Modelling”, I.A.E.A. TechDoc., I.A.E.A. Vienna, 2009
218. L. Feketeová, J. Žabka, F. Zappa, V. Grill, P. Scheier, T. D. Märk, Z. Herman:  
 Surface-induced dissociation and chemical reactions of  $C_2D_4^+$  on stainless steel, carbon (HOPG), and two different diamond surfaces.  
*J. Am. Soc. Mass Spectrom.* **20**, 927-938 (2009).
219. Z. Herman, J. Žabka, A. Pysanenko  
 Correlations between survival probabilities and ionization energies of slow ions colliding with room-temperature and heated surfaces of carbon, tungsten, and beryllium  
*J. Phys. Chem. A* **113**, 14838 – 14844 (2009)
220. J. Žabka, J. Roithová, P. Španěl, Z. Herman:  
 Dynamics of formation of products  $D_2CN^+$ ,  $DCN^+$ , and  $CD_3^+$  in the reaction  $N^+$  with  $CD_4$ :  
 A crossed-beam and theoretical study  
*J. Phys. Chem. A* **114**, 1384-44 (2010) (W.C. Lineberger Honor Issue)
221. Z. Herman, F. Tureček:  
 Vladimír Hanuš, June 5, 1923 – July 7, 2009-10-08 (Obituary)  
*J. Am. Soc. Mass Spectrom.* **20**, 2352 (2009)
222. M. A. Parkes, J. F. Lockyear, S. D. Price, D. Schröder, J. Roithová, Z. Herman:  
 Selective Dissociation in Dication-Molecule Reactions  
*Phys.Chem. Chem.Phys.* **12**, 6233-6243 (2010).
223. Jan Žabka, Claire L. Ricketts, Detlef Schröder, Jana Roithová, Helmut Schwarz, Roland Thissen, Odile Dutuit, Stephen D. Price, Zdenek Herman  
 Crossed-beam scattering studies of electron-transfer processes between the dication  $CO_2^{2+}$  and neutral  $CO_2$ : Electronic states of reactants and products involved  
*J. Phys. Chem. A* **114**, 6463-6471 (2010).
224. Z. Herman:  
 Beginnings of mass spectrometry in the Czech Republic: Mass spectrometry in the Institute of Physical Chemistry of the Academy of Sciences I ( in Czech: Počátky hmotnostní spektrometrie u nás: Hmotnostní spektrometrie v Ústavu fyzikální chemie Akademie věd I )  
*Chem. listy* **104**, 955-990 (2010).
225. . Z. Herman:  
 Beginnings of mass spectrometry in the Czech Republic: Mass spectrometry in the Institute of Physical Chemistry of the Academy of Sciences II ( in Czech: Počátky hmotnostní spektrometrie u nás: Hmotnostní spektrometrie v Ústavu fyzikální chemie Akademie věd II )  
*Chem. listy* **105**, 63-93 (2011).
226. A. Keim, B. Rasul, N. Endstrasser, P. Scheier, T.D. Märk, Z. Herman:  
 Interaction of small hydrocarbon ions and  $Ar^+$  with carbon-fiber-composite surfaces at room temperature  
*Int. J. Mass Spectrom.* **306**, 204-209 (2011)
227. K. Dryahina, B. K. Cunha de Miranda, P. Španěl, J. Žabka, C. Alcaraz, Z. Herman:  
 Selected ion flow tube study of ion-molecule reactions of  $N^+(^3P)$  and  $Kr^+$  with C3 hydrocarbons propane, propene and propyne.  
*J. Phys. Chem. A* **115**, 7310-15 (2011).

228. Z. Herman, J. Žabka, A. Pysanenko:  
 Survival probability of slow ions collision with room-temperature and heated surfaces of beryllium.  
*Mol. Phys.* **110**, 1669-73 (2012)
229. Z. Herman:  
 Early stages of mass spectrometry in this country and mass spectrometry in the Institute of Physical Chemistry of the Academy of Sciences. (in Czech: Začátky hmotnostní spektrometrie u nás a hmotnostní spektrometrie v Ústavu fyzikální chemie Akademie věd)  
 Chapter in „History of Mass Spectrometry in Czechoslovakia“, Czech Society for Mass Spectrometry, Praha 2012, pp. 13-42 (ISBN 978-80-905045-2-3)
230. Odile Dutuit, Nathalie Carrasco, Roland Thissen, Véronique Vuitton, Christian Alcaraz , Pascal Pernot, Nadia Balucani, Piergiorgio Casavecchia, André Canosa, Sébastien Le Picard, Jean-Christophe Loison, Zdenek Herman, Jan Zabka, Daniela Ascenzi, Pietro Franceschi, Paolo Tosi, Stephen Price, Panayotis Lavvas:  
 Critical review of N, N<sup>+</sup>, N<sub>2</sub><sup>+</sup>, N<sup>++</sup> and N<sub>2</sub><sup>++</sup> main production processes and reactions of relevance to Titan's atmosphere.  
*ApJS*, **204**, 20-65 (2013)
231. Z. Herman:  
 Electron transfer processes of atomic and molecular doubly charged ions: Information from beam experiments.  
*Mol. phys.* **111**, 1697-1710 (2013).
232. M. Harnisch, A. Keim, P. Scheier, Z. Herman:  
 Formation of HCN<sup>+</sup> in heterogeneous reactions of N<sub>2</sub><sup>+</sup> and N<sup>+</sup> with surface hydrocarbons.  
*J. Phys. Chem. A* **117**, 9653-60 (2013) (special issue Astrophysics honoring T. Oka).
233. A. Keim, M. Harnisch, P. Scheier, Z. Herman:  
 Collisions of low-energy ions Ar<sup>+</sup> and N<sub>2</sub><sup>+</sup> with room-temeprature and heated surfaces of tungsten, beryllium, and a mixed beryllium-tungsten thin film.  
*Int. J. Mass Spectrom.* **354-355**, 78-86 (2013)
234. J. Lengyel, R. Gorejova, Z. Herman, M. Fárník:  
 Proton transfer in hydrogen-bonded network of phenol molecules: Intracluster formation of water.  
*J. Phys. Chem. A* **117**, 11225-11232 (2013)
235. M. Harnisch, A. Keim, P. Scheier, Z. Herman:  
 Collisions of low-energy Ar<sup>+</sup>, N<sub>2</sub><sup>+</sup>, and D<sub>2</sub><sup>+</sup> ions with room-temperature and heated surfaces of mixed beryllium-tungsten thin films of different composition.  
*Int. J. Mass Spectrom.* **365-366**, 316-323 (2014).
236. Z. Herman, J.H. Futrell:  
 Dynamics of ion-molecule reactions from beam experiments: A historical survey  
*Int. J. Mass Spectrom.* (in print 2014)
237. Z. Herman:  
 Chemical reactions of multiply-charged ions: Information from beam scattering experiments  
*Int. J. Mass Spectrom.* (in print)

5.9. 2014