Prof. R. K. Janev

CURRICULUM VITAE

I. General

1. Name: Ratko K. Janev

2. Date and Place of Birth: March 30, 1939; Sandanski (Bulgaria)

3. Nationality: Macedonia

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Macedonian Academy of Sciences and Arts,
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II. Educational Background

1. Undergraduate Studies:
(1958 – 1963)
Faculty of Electrical Engineering,
Department of Nuclear Physics and Engineering,
University of Belgrade, Yugoslavia

2. Graduate Studies:
(1963 – 1965)
Faculty of Natural Sciences and Mathematics,
Department of Theoretical Physics,
University of Belgrade, Yugoslavia

3. Doctoral Studies:
(1966 -1967)
Faculty of Physics,
Department of Theoretical Physics,
St. Petersburg State University, Russia

4. Academic Degrees:

1963: B.Sc. in Nuclear Physics,

1965: M.Sc. in Theoretical Atomic Physics,

1968: PhD in Theoretical Atomic Physics,

1975: Lecturer, Theoretical Atomic Collision Physics
Belgrade University , Department of Physics

1988: Member of Macedonian Academy of Sciences

and Arts, Skopje, Macedonia

III. Research and Academic Activities

1. Research:

1965-1972:	Boris Kidrich Institute for Nuclear Sciences, Belgrade, Ion Physics Laboratory; Head, Theoretical Atomic Physics Group;
1972-1987:	Institute of Physics, Belgrade, Dept. of Theoretical Physics, Head, Theoretical Atomic Physics Section;
1987-1999:	International Atomic Energy Agency, Vienna, Austria, Division of Physical and Chemical Sciences, Nuclear Data Section Head, Atomic and Molecular Data Unit;
1999-present:	Macedonian Academy of Sciences and Arts, Skopje, Research Centre for Energy, Informatics and Materials, Senior Adviser

2. Lecturing:

1971-1974:	Atomic Physics, Faculty of Natural Sciences and Mathematics, Theoretical Physics Department, Sts. Cyril and Methodius University, Skopje
1975-1987:	Quantum Scattering Theory, Faculty of Natural Sciences and Mathematics, Theoretical Physics Department, Belgrade University

IV. Research Areas and Results (period: 1966-2013)

A. Research Areas:

1. Atomic, molecular and optical physics (collision processes, interactions, structure);

2. Plasma physics and controlled thermonuclear fusion (transport, heating, modeling, divertor physics);

3. Particle-solid surface interactions (back-scattering, sputtering, resonance and Auger processes);

4. Aeronomy and geophysics (atmospheric chemistry, ozonospheric physics);

5. Laser physics (population inversion in gaseous lasers, atom-laser interactions).

B. Research Results (see List of Publications)

1. Books, monographs, compendia: 13
2. Chapters in books: 12
3. Review articles and invited papers: 25
4. Articles in scientific journals: 267
5. Invited talks at international conferences 35

C. MSc and PhD Students Supervision

1. MSc. students: 12
2. PhD students: 9

V. Membership in Learned Societies

1. Macedonian Academy of Sciences and Arts (since 1988);
2. New York Academy of Science (1994);
3. American Association for Advancement of Science (1996);
3. European Physical Society
(Advisory Board on Electronic and Atomic Collisions; 1993 - 1997).

VI. Membership in Advisory Boards, Scientific and Program Committees of International Conferences and Symposia

1. European Physical Society Sectional Conference on Atomic and Molecular Physics of Ionized Gases (ESCAMPIG) (1977- 1986);
2. International Conference on Laser Science (LASER 1981-1984; Laser Science 1985-89);
3. International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC) (1985-1989);
4. International Conference on the Physics of Highly Charged ions (1984, 1994);
5. International Conference on Plasma Physics (1992, 1994);

6. International Conference on Atomic and Molecular Data and Their Applications (ICAMDATA) (1997- present); Chair of International Program Committee: 2000-2004.

7. International Symposium on Ion – Atom Collisions (1992);

8. International Symposium on Atomic and Molecular Processes in Fusion Plasmas (Nagoya, Japan 1996);

9. International Symposium on Atomic Processes in Low –Temperature Plasmas (Oxford, 1997);

10. International Seminar on Atomic Processes in Plasmas (Toki, Japan,1999).

VII. Invited Visiting Professor (two months to one year, or more)

1. Observatoire de Paris, Meudon, France (1974 – 1975)
2. University of Colorado/JILA, Boulder, USA (1981- 1982) (Visiting Fellow)
3. Princeton University/PPPL, Princeton, USA (1983, 1984, 1985,1986) (Consultant)
4. Royal Holloway College, Surrey/London, England (1984)
5. University of Durham, Durham, England (1984-85)
6. Université Catholique de Louvain, Louvain-la-Neuve, Belgium (1981, 1986, 1987, 2006, 2007)
7. National Institute for Fusion Science, Toki, Japan (1999 – 2000, 2003, 2004, 2006-2007)
8. University of Tennessee/ORNL, Knoxville/Oak Ridge, USA (1983-1987, 2001, 2003)
9. Forschungszentrum-Juelich, Juelich, Germany (2002 – 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012)
10. Institute of Applied Physics and Computational Mathematics, Beijing, China (2005, 2006, 2007,2008, 2009, 2010, 2011)

VIII. Advisory and Consulting Functions

1. Consultant of Princeton Plasma Physics Laboratory, Princeton, USA (1983-86)
3. Consultant of Oak Ridge National Laboratory, Oak Ridge, USA (1983 – 87)

IX. Awards and Recognition

1. Institute of Physics, Belgrade, research award (1974, 1978);
2. Homage of the Universite' Libre de Bruxelles (1979);
3. JILA Fellow (Boulder, Colorado., USA) ;
4. Alexander von Humboldt Research Award, Germany (2004).

X. Referee for:

1. Physical Review A;
2. Journal of Physics B: Atomic , Molecular and Optical Physics;
3. Physics of Plasmas;
4. European Physics Journal D: Atoms and Plasmas;
5. Phisica Scripta;
6. Nuclear Fusion;
7. Plasma Physics and Controlled Fusion.

R.K. Janev: **Last update: 15/02/2015**

LIST OF PUBLICATIONS

Summary:

A) Monographs, edited books and journal volumes, compendia: 16

B) Chapters in books: 12

C) Review articles, invited papers: 25

D) Articles in refereed journals: 277

E) Invited talks at international conferences: 35

Detailed list of publications

A. Monographs, Editted Books and Journal Volumes, Compendia

(i) Monographs

1. R.K. Janev
   Atomic Physics, Vols. 1 and 2
   University Press, Skopje (1972) (in Macedonian)

2. R.K. Janev, L.P. Presnyakov, V.P. Shevelko
   Physics of Highly Charged Ions.
   Springer-Verlag, Berlin-Heidelberg (1985)

3. L.P. Presnyakov, V.P. Shevelko, R.K. Janev
   Elementary Processes Involving Multiply Charged Ions.
   Energoatom Izdat, Moscow (1986), (in Russian)

4. R.K. Janev, W.D. Langer, K. Evans, D.E. Post
   Elementary Processes in Hydrogen-Helium Plasmas.
   Springer-Verlag, Berlin-Heidelberg (1987)

5. V.I. Lend'el, V.Yu. Lazur, M.L. Karbovanets, R.K. Janev
   Introduction to the Theory of Atomic Collisions.
   Vysshaya shkola, L'vov (1989), (in Russian)

6. R.K.Janev
   Controlled Thermonuclear Fusion.
   Institute of Physics, Belgrade (1989) (in Serbo-Croatian)

7. R.K.Janev, Lj.Petkovski
   Atomic Physics.

Macedonian Academy of Sciences and Arts Press, Skopje (2012) (in Macedonian)

(ii) Editted Books

9. R.K. Janev (ed)
Physics of Ionized Gases.
(Invited Lectures and Progress Reports of SPIG'78)
Nauka i društvo, Beograd (1978)

10. R.K. Janev, H.W. Drawin (eds.)
Atomic and Plasma-Material Interaction Processes in Controlled Thermonuclear Fusion.
Elsevier Publ. Co., Amsterdam (1993)

11. R.K. Janev (ed.)
Atomic and Molecular Processes in Fusion Edge Plasmas.
Plenum Publ. Corp., New York (1995)

(iii) Guest Editor for international journal volumes

12. Scripta Physica, Topical issue, vol. **T 37** (1991): "Collision Processes of Metallic Ions in Fusion Plasmas"

13. Scripta Physica, Topical issue, vol. **T 62** (1996): "Collision Processes of Be and B Atoms and Ions in Fusion Plasmas"

14. Scripta Physica, Topical issue, vol. **T 96** (2002): "Atomic and Molecular Processes in Divertor Plasma Volume Recombination" (with D.R. Schultz as co-editor)

(iv) Compendia

15. R.A. Phaneuf, R.K. Janev, M.S. Pindzola
Atomic Data for Fusion, Vol. 5: Collisions of Carbon and Oxygen Ions with Electrons, H, H_2 and He.
Oak Ridge National Laboratory, ORNL-6090, Oak Ridge, Tennessee (1987)

16. R.K. Janev, J.J. Smith
Cross Sections for Collision Processes of Hydrogen Atoms with Electrons, Protons and Multiply Charged Ions.
At. Plasma-Mat. Inter. Data Fusion, vol. 4, Vienna (1993).

B. Chapters in Books

1. R.K. Janev, D.E. Post
Atomic physics aspects of particle transport in fusion plasmas.
In: "Physics of Ionized Gases", Ed. M.M. Popovic (World Sci. Publ. Co., Singapore, 1985),p. 201

2. R.K. Janev
Theory of charge exchange and ionization in ion-atom (ion) collisions.
In: "Atomic Processes in Electron-Ion and Ion-Ion Collisions", Ed. F. Brouillard, (Plenum Press, New York, 1986), p. 239

3. R.K. Janev, P.S. Krstic
Dynamic processes involving quasi-stationary states.
In: "Spectroscopy and Collisions of Few-Electron Ions"
Eds. V. Zoran et al., (World Scientific Inc., Singapore, 1989) p. 317

4. R.K. Janev
Atomic processes in thermonuclear fusion plasmas.
in: "Review of Fundamental Processes and Applications of Atoms and Ions", Ed. C.D. Lin
(World Scientific Publ. Co., Singapoore, 1993) p. 1

5. R.K. Janev
Role of atomic and plasma-material interaction physics in controlled thermonuclear fusion research and development.
In: "Atomic and Plasma-Material Interaction Processes in Controlled Thermonuclear Fusion", Eds. R.K. Janev and H.W. Drawin (Elsevier, Amsterdam, 1993) p. 27

6. R.A. Phaneuf, R.K. Janev
Establishment and status of atomic and molecular collision databases for fusion plasma applications.
In: "Atomic and Plasma-Material Interaction Processes in Controlled Thermonuclear Fusion", Eds. R.K. Janev and H.W. Drawin (Elsevier, Amsterdam, 1993) p. 371

7. R.K. Janev
Basic properties of fusion edge plasmas and role of atomic and molecular processes.
In: "Atomic and Molecular Processes in Magnetic Fusion Edge Plasmas", Ed. R.K. Janev (Plenum Press, New York, 1995) p. 1

8. R.K. Janev, H.P. Winter, W. Fritsch
Electron transfer processes in slow collisions of H, He and H_2 with plasma impurity ions.
In: "Atomic and Molecular Processes in Magnetic Fusion Edge Plasmas", Ed. R.K. Janev (Plenum Press, New York, 1995) p. 341

9. F. Linder, R.K. Janev, J. Botero
Reactive ion-molecule collisions involving hydrogen and helium.
In: "Atomic and Molecular Processes in Magnetic Fusion Edge Plasmas",
Ed. R.K. Janev (Plenum Press, New York, 1995) p. 397

10. R.K. Janev
Excitation processes in collisions of atoms with multiply charged ions.
In: "Atomic Physics with Heavy Ions",
Eds. H.F. Beyer and V.P. Shevelko (Springer, Heidelberg-Berlin, 1999) p. 291

11. R.K.Janev
Collision processes of atomic and molecular hydrogen in fusion plasmas.
In: "Atomic and Surface Data Issues in Nuclear Fusion Research",
Eds. D.Reiter and R.E.H.Clark (Springer, Heidelberg-Berlin, 2005) p. 415.

12. R.K.Janev, D.Reiter, U.Samm
Atomic processes in low-temperature hydrogen plasmas.
In: "Encyclopedia of Low-Temperature Plasmas", Series B, Vol. V-1/2 (2007).
Ed. V. Fortov (Moscow, 2007) p.110 (In Russian)

C. Review Articles, Invited Papers

1. R.K. Janev
Modern methods in the theory of heavy particle collisions.
In: "Physics of Ionized Gases", (Inv. Lectures of IV Yugoslav Symp. Phys. Ioniz. Gases)
Ed. B. Perovic, Beograd, 1969, p.133

2. R.K. Janev
Non-adiabatic transitions between ionic and covalent states.
Advances in Atom. Mol. Phys. **12**, 1 (1976)

3. R.K. Janev
Atomic and molecular processes involving ionic-covalent nonadiabatic coupling.
In: "Physics of Ionized Gases", (Inv. lectures and progress reports of SPIG-78),
Ed. R.K. Janev, Beograd, 1978, p. 171

4. R.K. Janev, T.P. Grozdanov
Charge-exchange processes in atom-multicharged ion collisions.
In: "Physics of Ionized Gases", (Inv. lectures and progress reports of SPIG-80),
Ed. M. Matic, Beograd, 1981, p. 351

5. R.K. Janev, L.P. Presnyakov

Collision processes of multiply charged ions with atoms.
Phys. Rep. **70**, 1 (1981)

6. B.H. Bransden, R.K. Janev
Electron capture in collisions of hydrogen atoms with fully stripped ions.
Adv. At. Mol. Phys. **19**, 1 (1983)

7. R.K. Janev
Excited states created in charge transfer collisions between atoms and highly charged ions.
Physica Scripta **T3**, 208 (1983)

8. R.K. Janev
An overview on collision processes of highly charged ions with atoms:
Present status and problems.
In: "Atomic Collision Processes with Multiply Charged Ions",
Ed. B. Perovic (B. Kidrich Inst. of Nucl. Sciences, Belgrade, 1983), p. 37

9. L.P. Presnyakov, R.K. Janev
Excitation and ionization processes in electron-multiply charged ion collisions.
In: "Atomic Collision Processes with Multiply Charged Ions",
Ed. B. Perovic (B. Kidrich Institute of Nuclear Sciences, Belgrade, 1983), p. 155

10. R.K. Janev, H. Winter
State - selective electron capture in atom-highly charged ion collisions.
Phys. Rep. **117**, 265 (1985)

11. M.I. Chibisov, R.K. Janev
Asymptotic theory of exchange interactions in ion-atom systems.
Phys. Rep. **166**, 1 (1988)

12. R.K. Janev
Atomic collisions in fusion plasmas.
J. de Physique (Paris) Coll. C1, T. **50**, C1-421 (1989)

13. R.K. Janev
Atomic processes in fusion plasmas.
In: Invited lectures of XIX ICPIG (University of Belgrade, Belgrade, 1989) p. 264

14. R.K. Janev
Atomic and molecular processes in fusion plasmas.
Proc. Int. Symp. on Atomic and Molecular processes in Fusion Plasmas;
Ed. H. Tawara, NIFS-DATA-Series **39**, 3 (1996)

15. R.K. Janev
Hidden crossing approach to inner-shell processes in ion-atom collisions.
Nucl. Instruments & Methods, Phys. Res. B **124**, 290 (1997)

16. R.K. Janev, E.A. Solov'ev
Application of hidden crossing theory to positron-hydrogen atom collisions.
In: Physics of Electronic and Atomic Collisions (Inv. lectures and progr. reports
of XX Int. Conf. Physics of Electronic and Atomic Collisions),
Eds. F. Aumayr, HP. Winter (World Scientific, Singapore, 1998) p. 393.

17. R.K. Janev
Atomic and molecular processes in SOL / divertor plasmas
Contrib. Plasma Physics **38**, 307 (1998)

18. R.K. Janev, K.H. Becker, R.E.H. Clark, G. Lister, K. Niemax
International coordination of atomic and molecular data efforts.
In: Internat. Conf. on Atomic and Molecular Data and their Applications,
Eds. P.J. Mohr and W.L. Wiese (AIP, **434**, 1998) p. 391.

19. R.K. Janev
Role of dissociative recombination and related molecular processes in fusion edge plasmas.
In: Dissociative Recombination IV: Theory, Experiment, Applications,
Eds.:M.Larson et al., (World Scientific, Singapore, 2000), p. 245.

20. R.K. Janev
Molecular processes in fusion edge plasmas.
Proc. Int. Seminar At. Processes in Plasmas,
Ed. T. Kato, NIFS-PROC-**44** (1999), p. 57.

21. R.K.Janev
Electron-molecule collisions in fusion divertor plasmas.
Proc. Internat. Symp.Electr.-Mol.Collisions and Swarms,
Eds. I.Fabrikant et al., (Univ.Nebraska, Lincoln,2001), p.49.

22. R.Celiberto, A.Laricchiuta, R.K.Janev
Cross section data for hydrogen plasma applications.
In: "Atomic and molecular data and their applications".
Eds. D.R.Schultz et al. (AIP Conf. Proc. Series, Vol. **636**, 2002) p. 277

23. R.K.Janev
Atomic and molecular physics issues in current thermonuclear fusion research.
Contemporary Physics, **46**, 121 (2005)

24. D.Reiter, M.Baeva, O.Marchuk. R.K.Janev
The role of atomic and molecular processes in magnetic fusion plasmas.
In: "Atomic and molecular data and their applications",
Eds. T.Kato et al., (AIP Conf. Proc. Series, Vol. **771**, 2006) p.3.

25. L.Ling, Y.Y.Qi, J.G.Wang, R.K.Janev
Debye plasma effects on atomic structure and dynamics.
In: "Atomic and molecular data and their applications",
Eds. S.P. Zhu, J. Yan (AIP Conf. Proc. Series, Vol. **1125**, 2008) p.58.

D. Articles in Refereed Journals

1. I.V. Komarov, R.K. Janev
Molecular term splitting by two-electron exchange.
Zh. Eksp. Teor. Fiz. 51, 1712 (1966)
(Sov. Phys.-JETP, **24**, 1259 (1967))

2. R.K. Janev
Resonant charge exchange in H^- - H collisions.
Ann. (Vestnik) Leningrad State Univ. **22**, 61 (1967) (in Russian)

3. R.K. Janev
A model for double nonresonant charge exchange.
Zh. Eksp. Teor. Fiz. **52**, 1221 (1967)
(Eng,transl,:Sov. Phys. JETP **25**, 812 (1967)

4. G.V. Dubrovskii, V.D. Ob'edkov, R.K.Janev
Dissociative electron attachment on molecules and estimation of the width of quasi-stationary states.
Zh. Theoret. Eksp. Khim. **3**, 601 (1967) (in Russian)

5. R.K. Janev, S.S. Pesic
The mobility of doubly charged ions in their parent gases.
Proc. Phys. Soc. **92**, 94 (1967)

6. R.K. Janev
Coupling of direct and exchange scattering in slow ion-atom collisions.
Fizika **1**, 1 (1969)

7. R.K. Janev
Optical-potential approach to high energy electron-atom collisions.
Fizika **1**, 173 (1969)

8. R.K. Janev

Phase equation for the Jost function.
Phys. Letts. **30A**, 233 (1969)

9. D.M. Davidovic, R.K. Janev
Resonant charge-exchange of negative ions in slow collisions with atoms.
Phys. Rev. **186**, 89 (1969)

10. S.S. Pesic, R.K. Janev, D.M. Davidovic
Transport properties of negative ions in their parent gases.
Phys. Rev. **186**, 95 (1969)

11. R.K. Janev, V.D. Ob'edkov
Evaluation of the electron affinity of Li by using an integral identity for the energy.
Fizika **1**, 233 (1969)

12. R.K. Janev, S.S. Pesic
On the behavior of low-energy inelastic cross section for atomic reactions.
J. Phys. B: **3**, 369 (1970)

13. R.K. Janev, D.M. Davidovic, A.R. Tancic
A simple model for Penning ionization.
Fizika **2**, 165 (1970)

14. R.K. Janev, V.D. Ob'edkov
Adiabatic representation for the exchange inelastic electron-atom amplitude.
Phys. Letts. **31A**, 578 (1970)

15. R.K. Janev, Dj. Zivanovic
A model for scattering of a particle on a bound system of particles.
Phys. Letts. **33A**, 127 (1970)

16. R.K. Janev, A.R. Tancic
Electron detachment in H - H^- and O - O^- collisions.
J. Phys. B: **4**, 219 (1971)

17. R.K. Janev
Atom-excited atom exchange interaction at large distances.
J. Phys. B: **4,** 215 (1971)

18. D.M. Davidovic, R.K. Janev
The influence of short-range atomic forces on the molecular term
splitting in (A, A^-) system. Application to O^- - O resonant charge exchange.
Phys. Rev. A: **3**, 604 (1971)

19. R.K. Janev, Dj. Zivanovic
The use of the Green's function method for scattering of
a particle on a system of bound particles.
Fizika **3**, 29 (1971)

20. R.K. Janev, A. Salin
Charge-exchange in hydrogen atom collisions.
J. Phys. B: **4**, 127 (1971)

21. R.K. Janev, D.M. Davidovic, I.V. Terzic
Transition rates of nonradiative resonant processes in the interaction of
Li^+ and Na^+ ions with Li, W, and Mo surfaces.

Surface Science **26**, 142 (1972)

22. R.K. Janev, A. Salin
Faddeev-Lovelace equations in the eikonal approximation.
Annals of Physics (N.Y.) **73**, 136 (1972)

23. R.K. Janev, A. Salin
Exchange interaction between ionic and covalent states of two atoms at large distances
J. Phys. B: **5**, 177 (1972)

24. M.A. Burnashev, R.K. Janev, V.D. Ob'edkov
Inelastic e-H and e-He collisions in the adiabatic approximation
Fizika **4**, 157 (1972)

25. R.K. Janev, A. Salin
Electron capture from hydrogen negative ions by fast protons.
Fizika **4**, 165 (1972)

26. R.K. Janev, Dz. S. Belkic
Muonium formation in slow collisions of positive mesons with hydrogen atoms.
J. Phys. B: **5**, L237 (1972)

27. R.K. Janev, A.R. Tancic
Recombination of H^+ and H^- ions in slow collisions.
J. Phys. B: **5**, L250 (1972)

28. G.F. Drukarev, V.D. Ob'edkov, R.K. Janev
Polarization effects in Penning ionization.
Phys. Letts. **42A**, 213 (1972)

29. R. Gayet, R.K. Janev, A. Salin
Electron detachment from negative ions by charged particle collisions: I. Proton impact.
J. Phys. B: **6**, 993 (1973)

30. Dz. S. Belkic, R.K. Janev
Electron capture from hydrogen and helium atoms by fast alpha particles.
J. Phys. B: **6**, 1020 (1973)

31. M.Ya. Amusia, N.A. Cherepkov, R.K. Janev, Dj. Zivanovic
The role of many-electron correlations in fast electron-atom inelastic collisions.
J. Phys. B: **6**, 1028 (1973)

32. Dz.S. Belkic, R.K. Janev
Formation of muonium in fast collisions of μ^+ mesons with atomic systems.
J. Phys. B: **6**, 2613 (1973)

33. R.K. Janev, Lj. Petkovski
Reaction rate coefficient for radiative electron attachment on $2S_{1/2}$ atoms.
Fizika **5**, 155 (1973)

34. R.K. Janev, Z. Maric
Pertubation of the spectrum of three-dimensional harmonic oscillator by a δ-potential.
Phys. Letts. **46A**, 313 (1974)

35. M.Ya. Amusia, N.V. Cherepkov, R.K. Janev, Dj. Zivanovic
On the problem of existence of collective oscillations in atoms.
J. Phys. B: **7**, 1435 (1974)

36. R.K. Janev
Interaction of atomic particles with a solid state surface:
I. Resonance processes.
J. Phys. B: 7, 1506 (1974)

37. R.K. Janev
Interaction of atomic particles with a solid state surface:
II. Resonant ionization of hydrogen-like atoms.
J. Phys. B: 7, L359 (1974)

38. R.K. Janev
Destruction of negative ions near a solid state surface.
Surface Science 45, 609 (1974)

39. R.K. Janev, H. van Regemorter
Negative ion formation by radiative electron attachment on atoms.
Astronomy and Astrophysics 37, 1 (1974)

40. R.K. Janev
Rate coefficient for $H + H^- \rightarrow H + H + e$ reaction
Astronomy and Astrophysics 35, 161 (1974)

41. R.K. Janev
The effect of an external magnetic field on resonant neutralization of
negative ions near a solid surface.
Surface Science **47**, 583 (1975)

42. R.K. Janev
On the long-range configuration interaction between ionic and covalent states.
J. Chem. Phys. **64**, 1891 (1976)

43. T.P. Grozdanov, R.K. Janev
Interaction of atomic particles with a solid surface:
III. Electron tunneling processes in presence of an external electric field.
J. Phys. B: **10**, 1385 (1977)

44. R.K. Janev, Z.M. Radulovic
Recombination of alkali positive and halogen negative ions.
J. Chem. Phys. **67**, 2856 (1977)

45. T.P. Grozdanov, R.K. Janev
Charge exchange collisions of multiply charged ions with atoms
Phys. Rev. A: **17**, 880 (1978)

46. R.K. Janev, Z.M. Radulovic
Ion-ion recombination and ion-pair formation processes in alkali-hydrogen diatomic systems.
Phys. Rev. A: **17**, 889 (1978)

47. T.P. Grozdanov, R.K. Janev
Survival probabilities of excited particles emerging from metal surfaces.
Phys. Letts. **65A**, 396 (1978)

48. T.P. Grozdanov, R.K. Janev
One-electron capture in slow collisions of highly charged ions with atoms.
Phys. Letts. **66A**, 191 (1978)

49. T.P. Grozdanov, R.K. Janev
Quasi-stationary spectrum of hydrogen-like atoms near a solid state surface.
Fizika **10**, 249 (1978)

50. R.K. Janev, A.A. Mihajlov
Excitation and deexcitation processes in slow collisions of
Rydberg atoms with ground state parent atoms.
Phys. Rev. A: **20**, 1890 (1979)

51. T.P. Grozdanov, R.K. Janev
Electron capture in slow collisions of multiply charged ions with hydrogen molecules.
J. Phys. B: **13**, L69 (1979)

52. R.K. Janev, A.A. Mihajlov
Resonant ionization in slow atom-Rydberg atom collisions.
Phys. Rev. A: **21**, 819 (1980)

53. R.K. Janev, S.B. Vojvodic
Survival probabilities of hydrogen negative ions emerging from Cs-coated W and Ni surfaces
Phys. Letts. **75A**, 348 (1980)

54. R.K. Janev, L.P. Presnyakov, V.P. Shevelko
One-electron capture from the inner shells in atom-multicharged ion collisions
Phys. Letts. **76A**, 121 (1980)

55. R.K. Janev, S.B. Vojvodic
Interaction of atomic particles with solid surfaces:
IV. One-electron resonant processes in the presence of a surface sub-monolayer.
J. Phys. B: **13**, 2481 (1980)

56. T.P. Grozdanov, R.K. Janev
Two-electron capture in slow ion-atom collisions.
J. Phys. B: **13**, 3431 (1980)

57. R.K. Janev, L.P. Presnyakov
Single-electron excitation and ionization processes in
atom-multicharged ion collisions.
J. Phys. B: **13**, 4233 (1980)

58. I.V. Komarov, T.P. Grozdanov, R.K. Janev
Influence of the core potential on the alkali atom Rydberg levels.
J. Phys. B: **13**, L573 (1980)

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E. Invited Talks at International Conferences

1. Modern methods in the theory of heavy particle collisions.
   IV SPIG, Herceg-Novi, 1968 (published, see C. 1)

2. Inelastic processes in slow collisions of highly excited atoms with ground state atoms.
   VII All-Union Conf. Electron. Atom. Collisions, Petrozavodsk, USSR, 1978 (unpublished)

3 Atomic and molecular processes involving ionic-covalent nonadiabatic coupling.
   IX SPIG, Dubrovnik, 1978 (published, see C. 3)

4. Charge exchange in slow ion-atom collisions.
   Nordic Summer School on Atomic Collision Processes, Sandbjerg Manor, Denmark, August 1980 (unpublished)

5. Charge exchange processes in atom-multicharged ion collisions.
   X SPIG, Dubrovnik, 1980 (published, see C. 4) (with T.P. Grozdanov)

6. Excited states created in charge transfer collisions between atoms and highly charged ions
   Symposium on Production and Physics of Highly Charged Ions, Stockholm, 1982 (published, see C. 8)

7. A critical review of theoretical cross section data for charge exchange in collisions of hydrogen atoms with highly charged ions.
   IAEA RCM on "Atomic Data for Fusion Plasma Diagnostics", Vienna, 1982 (with B.H. Bransden) (published, C.6)

8. Charge transfer processes in fusion plasmas.
   RAL/JET workshop on Atomic Physics of Fusion Plasmas, Abingdon, 1984 (unpublished)

9. Atomic physics aspects of particle transport in fusion plasmas.
   XII SPIG, Sibenik, 1984 (published, see B. 1) (with D.E. Post)

10. Influence of excited states on neutral beam heating on controlled fusion plasma experiments.
    8th Conf. Application of Accelerators in Research and Industry, Denton, TX 1984 (unpublished) (with D. Post, C. Boley and R. Wieland)

11. Theory of charge-exchange and ionization in ion-atom (ion) collisions.

2nd Intern. Symposium on Electron-Ion and Ion-Ion Collisions,
Han sur Less, Belguim, 1985); (published, see B. 2)

12. Collision processes involving excited species in fusion edge plasmas.
IAEA Specialists' Meeting on Atomic and Molecular Data for Plasma Edge Studies,
Vienna, 8-10 July 1987 (unpublished)

13. Atomic and molecular processes in tokamak edge plasmas.
IX ESCAMPIG, Lisbon, August 1988 (unpublished;
Abstract in: ECA-Series, Vol. 12-H, P.36 (1988))

14. Atomic collisions for fusion: A review.
IV International conference on the physics of multiply charged ions
Grenoble, September 1988 (published, see C. 13)

15. Dynamic processes involving quasi-stationary states.
International conference on spectroscopy and collisions of few-electron ions
Bucharest, September 1988 (with P.S. Krstic, published, see B. 3)

16. Energetic neutral beam penetration in fusion reactor plasmas.
All-Union Seminar on "Toroidal Systems in Controlled Fusion",
Dubna, USSR, February 20-24 (1989) (unpublished)

17. Atomic physics database for neutral beam stopping cross sections.
ITER Workshop on "Current Drive and Heating Physics",
Garching, June 12-16 (1989) (unpublished)

18. Atomic processes in fusion plasmas.
XIX Int. Conf. Phenomena Ioniz. Gases
Belgrade, July 10-14, 1989, (published, see C. 14)

19. Atomic and molecular data for controlled thermonuclear fusion.
Belgian Physical Society Meeting,
Mons, Belgium, May 26-27, 1994, (unpublished)

20. Atomic and molecular processes in fusion plasmas.
Int. Symposium on Atomic and Molecular Processes in fusion plasmas.
Nagoya, NIFS, Sept. 17-19, 1996, (published; see C.15)

21. Hidden crossings approach to inner-shell ion-atom collision processes.
6th Workshop on Fast Ion-Atom Collisions
Debrecen (Hungary), Sept. 4-6, 1996, (published, see C.16)

22. Application of hidden crossing theory to positron-hydrogen atom collisions.
(with E.A. Solov'ev)
XX Internat. Conf. Physics of Electronic and Atomic Collisions,
Vienna (Austria), July 23-29, 1999, (published, see C. 17)

23. Atomic and molecular processes in SOL / divertor plasmas.
6th Internat. Workshop on Plasma Edge Theory in Fusion Devices,
Oxford, UK, September 15-16, 1997, (published, see C. 18)

24. International coordination of atomic and molecular data efforts.
1st ICAMDATA, Gaithersburg, NIST, Sept. 29 - Oct. 2, 1997, (published, see C. 19)

25. Atomic and molecular databases for fusion plasma research.
Internat. Workshop on Collisional and Radiative Spectroscopy in Laboratory
and Space Research,
Moscow, October 12-14, 1998, (unpublished)

26. Role of dissociative recombination and related molecular processes in fusion edge plasmas.
4th Internat. Conf. on Dissociative Recombination,
Nässlingen, Sweden, June 16-20, 1999, (published, see C. 20).

27. Molecular processes in fusion edge plasmas.
Internat. Seminar on Atomic Processes in Plasmas,
Toki, Japan, July 29-30, 1999, (published, see C.21)

28. Atomic and molecular processes for MAR: Status and prospects.
Internat. Workshop on Molecule Assisted Plasma Recombination (MAR),
Nagoya Univ., Nagoya, Japan; November 8, 1999, (unpublished).

29. Alternative mechanisms for molecule assisted recombination of divertor plasmas.
Internat. Workshop on Atomic and Molecular Processes in Divertor Plasmas,
Oak Ridge National Laboratory, Oak Ridge, USA, Oct.12-13, 2000, (published; D.176)

30. Electron-molecule collisions in fusion divertor plasmas.
Internat. Symp. Electron-Molecule Collisions and Swarms, EMS-01,
Lincoln, NE, USA; July 14-16, 2001, (published; C. 22)

31. Cross section data for hydrogen plasma applications. (with R.Celiberto)
3rd ICAMDATA, Gatlinburg, USA, April 24-27, 2002, (published, C.23)

32. Collision processes of atomic and molecular hydrogen in fusion plasmas.
IAEA Techn. Meeting on “Atomic and Plasma-Material Interaction Data
for Fusion Science and Technology”,
Juelich, Germany, Oct. 28-31, 2002, (published, B11)

33. The role of atomic and molecular processes in magnetic fusion plasmas.(with D.Reiter)
    4th ICAMDATA, Toki, Japan, Nov. 28 – Dec.2, 2004, (published, C.24).
34. Molecular processes in fusion edge plasmas.
    Ann. Meeting of Japan Society of Plasma Science and Fusion Research,
    Tsukuba, Japan, Nov.28 – 30, 2006 (unpublished).
35. Debye plasma effects on atomic structure and dynamics (with J.G.Wang)
    6th ICAMDATA, Beijing, China, Oct. 28 – 31 (2008) (published, C.25)