


Profile

Name of the Faculty	Dr. Sanjeev Rachuru	
Designation	Professor	
Department	Freshman engineering	
Area of Interest	Chemical Education and Computational Chemistry	
Subjects Taught	For MPhil (Course work): Thermodynamics and Chemical Kinetics For MSc students: Chemical Kinetics, Thermodynamics, Photochemistry, Quantum Chemistry, Electrochemistry, Nuclear Chemistry, Statistical Thermodynamics & Physical Chemistry lab For Engineering students: Engineering Chemistry Environmental Science and Engineering chemistry lab	
JNTUH Registration Id	6663-160226-123708	
College Staff Code	SC1164	

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Educational Qualifications:

S.No.	Degree	Specialization	University/College	Year
1	BSC	MPC	Osmania University	1993
2	MSc	Chemistry	Andhra University (Campus)	1995
3	PhD	Chemical Kinetics	Osmania University (Campus)	2001
4	Post doctoral fellow	Computational Chemistry	University of Kwazulu- Natal, Westville Campus, Durban, South Africa	2014- 15

Research Publications:

S. No.	Publication details (85 in peer reviewed international and national journals)
1.	Rachuru, S., Vandanapu, J. Transmission of substituent effect through π -conjugation by cyclobutane ring. <i>J Chem Sci</i> 135 , 107 (2023). https://doi.org/10.1007/s12039-023-02220-y SCI Indexed IF =1.7) (Springer)
2.	Vandanapu, J., Rachuru, S., Skelton, A.A. <i>et al.</i> pK _a s of Five Membered Heterocyclic Ring Systems C ₄ H ₄ XH (X = N, P, As, Sb, Bi, Mc) Including the Novel Hypothetical Molecule Moscole (C ₄ H ₄ McH). <i>Russ. J. Phys. Chem.</i> 97 , 2463–2469 (2023). https://doi.org/10.1134/S0036024423110134 SCI journal with IF=0.7 Springer
3.	Sanjeev, R., Jagannadham, V. & Geelan, D. Cyclopentadiene: Explaining Its Deviation from the Correlation of pK _a versus Number of Nitrogen Atoms of the Pyrrole to Pentazole Series and Its Closeness to the Correlation of pK _a versus Number of Phosphorous Atoms of the Phosphole to Pentaphosphole Series. <i>Russ J Gen Chem</i> 93 , 116–119 (2023). https://doi.org/10.1134/S1070363223010164 SCI journal with IF=0.9 2023 (Springer)
4.	Rachuru, Sanjeev, Padmavathi, Devarakonda A., Ramavath, Ravi, Vandanapu, Jagannadham and Skelton, Adam A. "The three pyridazines, three naphthyridines and two azoles: effect of the position of the second heteroatom on pK _{aH} of their eight conjugate acids" <i>Zeitschrift für Physikalische Chemie</i> , vol.

	236, no. 11-12, 2022 , pp. 1617-1626. https://doi.org/10.1515/zpch-2022-0111 (Nov. 9 th 2022) IF = 2.5 SCI indexed (Germany, De Gruyter)
5	The pK _a of pentazole. Sanjeev Rachuru , Jagannadham Vandanapu and Adam A Skelton <i>Australian Journal of chemistry</i> SCI indexed 74(8) 584-590, Impact factor 1.3 https://doi.org/10.1071/CH21014 .
6	Theoretical Determination of pK _a s of P(1)- H Phospholes and Their Comparison with N(1)- H Sanjeev Rachuru , Jagannadham Vandanapu and Adam A Skelton <i>Australian Journal of chemistry</i> SCI indexed 74(9) 660-668 https://doi.org/10.1071/CH21122 Impact factor 1.3
7	Application of Hammett equation to hydrogen bond interactions of benzoic acid in chloroform/water system and explanation for non-linear Hammett relation to partition coefficients for the same system. <i>Computational and theoretical chemistry</i> Sanjeev Rachuru , Jagannadham Vandanapu and Adam A. Skelton Volume 1190, 15 November 2020, 13024 https://www.sciencedirect.com/science/article/abs/pii/S2210271X20303248 SCI indexed . Impact factor 1.9
8	Is Interfacial Tension of a Liquid-air Interface Thermodynamically a Cyclic Process? <i>Journal of Molecular Liquids</i> R.Sanjeev , David Geelan and V.Jagannadham. Volume 298, 15 January 2020, 112138 https://doi.org/10.1016/j.molliq.2019.112138 SCI indexed . IF Impact factor 6.165
9	Do phase transition temperatures T _{mp} and T _{bp} obey Linear Free Energy Relationships? <i>Journal of Molecular Liquids Elsevier Publications</i> Sanjeev R and V.Jagannadham Vol 302, March 2020, pp 1-7; https://doi.org/10.1016/j.molliq.2020.112496 SCI Indexed . IF 6.165
10	Attenuation effect as a tool to explain sp ³ carbon (-CH ₂ -) is a good electron insulator and a sp ² carbon (-CH=CH-) is a good electron transmitter: an undergraduate one hour chemistry class-room tutorial <i>National Academy of Science letters</i> March 2020 R.Sanjeev , R.Ravi and V Jagannadham, Vol 43, No1, pp 5-8 SCI indexed https://link.springer.com/article/10.1007/s40009-019-00804-2 Impact factor = 0.78
11	Experimental and Quantum Mechanical Study of Nucleophilic Substitution Reactions of <i>meta</i> - and <i>para</i> -Substituted Benzyl Bromides with Benzylamine in Methanol: Synergy Between Experiment and Theory, R. Sanjeev , R. Ravi , V. Jagannadham and Adam A. Skelton, <i>Australian Journal of Chemistry</i> - http://dx.doi.org/10.1071/CH16061 Published online: 18 July 2016, in print 2017, vol. 70, page 90-100, (UGC recognized Journal) SCI indexed https://www.publish.csiro.au/CH/CH16061 Impact factor = 1.3
12	Non-Linear Taft Relationship applied to surface tensions of aliphatic acids: Inter-molecular hydrogen bonding versus intra-molecular hydrogen bonding: Sanjeev Rachuru , Jagannadham Vandanapu, Adam A. Skelton, <i>Journal of Molecular Liquids</i> , 224 (2016) 43–46, SCI indexed DOI: 10.1016/j.molliq.2016.09.087 IF=6.165
13	Nucleophilic Substitution Reactions of <i>meta</i> and <i>para</i> -Substituted Benzylamines with Benzyl Bromide in Methanol Medium, R. Ravi, R. Sanjeev , V. Jagannadham and Adam A Skelton, <i>International Journal of Chemical Kinetics</i> , (2015) Vol. 47, pages 36-41, SCI indexed https://onlinelibrary.wiley.com/doi/abs/10.1002/kin.20890 Impact factor 1.7
15	Intermediate obtained from photo ionization, serving as precursor for the synthesis of Schiff base, R. Sanjeev, V. Jagannadham , and R. Veda Vratah, <i>Bull. Chem. Soc. Ethiopia</i> , (2014), vol. 28, page 295-300, , DOI: 10.4314/bcse.v28i2.13 SCI indexed Impact factor 1.3

16	Predicting the pK _a values of the deprotonation equilibria of benzenonium carbocations R.Sanjeev , David Geelan and V.Jagannadham. <i>Resonance journal of Science education</i> Volume 27, Issue 2, pp 283-288; Published on 4 th February 2022; https://www.ias.ac.in/article/fulltext/reso/027/02/0283-0288 Scopus indexed .
17	The rationale behind expressing hardness of water as CaCO ₃ equivalents and comprehension of fundamental relation in volumetric analysis revisited. Sanjeev Rachuru , R.Veda Vrath, Raju Manthena and V. Jagannadham, Published on 8 th March 2022, <i>Resonance journal of Science education</i> Volume 27, issue 3, pp 443-448 https://www.ias.ac.in/article/fulltext/reso/027/03/0443-0448 Scopus Indexed
18	Carbon Credits: Project Based Learning to Enhance Conceptual Understanding. R.Sanjeev , R.Veda Vrath, Sreedhar Pandiri, Anilkumar Ambala & V.Jagannadham Published on 5 th April 2022; Volume 27, Issue 4. <i>Resonance journal of Science education</i> https://www.ias.ac.in/article/fulltext/reso/027/04/0667-0671 Scopus Indexed
19	A simple rule of thumb for the explanation of d-orbital splitting in complexes R. Sanjeev, V.Jagannadham and R. Veda Vrath; <i>Educacion Quimica</i> Volume 31, no: 4, October 2020 pp 35-39 68132 http://www.revistas.unam.mx/index.php/req/article/view/71913/68132 Scopus Indexed
20	Application of Non-Linear Hammett Relationship to Surface Tensions and Dipole Moments in Estimating the Associative Behavior of Phenols: A Chemical Educational Article to Graduate Students, R. Sanjeev, V. Jagannadham , Adam A. Skelton and R. Veda Vrath, <i>Asian Journal of Chemistry</i> ; Vol. 27, No. 10 (2015), 3297-302, http://www.asianjournalofchemistry.co.in/user/journal/viewarticle.aspx?ArticleID=27_9_34 Scopus DOI: 10.14233/ajchem.2015.18583
21	Is Hammett Correlation of Dipole Moment of mono-Substituted Benzenes Helpful to Distinguish o,p-Directing Groups from m-Directing Groups in an Aromatic Electrophilic Substitution? A Chemical Education Perspective R. Sanjeev , D. A. Padmavathi and V. Jagannadham <i>World Journal of Chemical Education</i> . USA, 2022, 10(1), 20-22 DOI: 10.12691/wjce-10-1-3 UGC-CARE indexed .
22	Do We Really Need the Concentration and Volume of a Solution of a Weak Acid to Calculate the Percentage Ionization or Degree of Ionization? R. Sanjeev , P. Sreedhar and V. Jagannadham <i>World Journal of Chemical Education</i> . USA, 2021; 9(2):64-67. doi: 10.12691/wjce-9-2-5 UGC CARE indexed .
23	Why the Second π -Bond Exceptionally Effective on pK _a Values of -ynoic (-C \equiv C-) Compounds? Chemical Education Perspective. R. Sanjeev , D. A. Padmavati, and V. Jagannadham <i>World Journal of Chemical Education</i> , USA vol. 9, no. 3 (2021): 94-95. doi: 10.12691/wjce-9-3-5. UGC CARE indexed .
24	Comparison of Substituent Effects in Benzenes (XC ₅ H ₅ C), Pyridines (XC ₅ H ₄ N) and Phosphorines (XC ₅ H ₄ P) and their Protonated Species R.Sanjeev and V.Jagannadham <i>World Journal of Chemical education</i> 2020 , 8(4), 155-162 Sept 27. DOI: 10.12691/wjce-8-4-3 UGC-CARE indexed .
25	Tetrahedral nature determines the stability of reactive intermediates A chemical education perspective Sanjeev Rachuru Jagannadham Vandanaupu and Sredhar Pandri. <i>Oriental J. Chemistry</i> , Feb 2019, <i>Volume 35, Number 1, page no.</i> web of science indexed
26	Can non-bonded pair of electrons of sp ³ nitrogen with two single σ -bonds on either side still transmit substituent electronic effects to the reaction site? Reversal of attenuation effect by sp ³ nitrogen – a chemical education perspective. <i>Chemical Methodologies</i> R Sanjeev , V Jagannadham and Ramavath Ravi. Volume 4, 2020; pp: 106-114; web of science indexed http://www.chemmethod.com/article_89838.html

27	Non-associative Behavior of Thiophenols: Trouton's Rule, Ramsey-Shields- Eötvös Equation and Application of Hammett Equation to the Surface Tension Data – A Chemical Education Perspective Education Quimica Mexica R.Sanjeev , David Geelan and V.Jagannadhama Volume 30, no: 4; October 2019. http://www.revistas.unam.mx/index.php/req/article/view/69633 Scopus Indexed.
28	Cooxidation not to be confused with catalysis: A chemical education article to physical-organic chemists, R. Sanjeev , D. A. Padmavathi and V. Jagannadham, <i>Oriental J. Chemistry</i> , 2018, Volume 34, Number 1, page no. 526-531, Impact factor = 0.22 http://dx.doi.org/10.13005/ojc/340159 Scopus and web of Science indexed
29	Silver bullet for the evaluation of equivalent weight of sodium thiosulfate for the reaction $2 \rightarrow 2S_2O_3^{2-} + 1S_4O_6^{2-} + 2I^-$, Sanjeev. R. , V. Jagannadham, Veda Vrath. R, V. E. M. Mamatha Bethapudi and Adam. A. Skelton, <i>Oriental J. Chemistry</i> , 2017, Volume 33, Number 5, page no.2673-2675, Impact factor = 0.22 Scopus & web of science India DOI : http://dx.doi.org/10.13005/ojc/330566
30	Role of Taft Equation in Selecting the Site of Attack in the Reactions of Aliphatic Amines and $Tl(III)$, R. Sanjeev , V. Jagannadham, Adam A Skelton, Pandiri Sreedhar, V. E. M. Mamatha Bethapudi and R. Veda Vrath, <i>Oriental J. Chemistry</i> , 2017, Volume 33, Number 5, page no.2292-2296, Impact factor = 0.22 Scopus and web of Science http://dx.doi.org/10.13005/ojc/330517
31	Hammett and Taft Equations are Tools for identifying the Rate-Determining Step of a Multi-Step Reaction: A One Hour Class-Room Lecture to Graduate Students, Rachuru Sanjeev , V. Jagannadham, Adam A Skelton and Rachuru Veda Vrath, <i>Chem. Educator</i> 2014, 19, 327–329, USA, http://chemeducator.org/bibs/0019001/19140327.html
31	Silver Bullet for the Conceptual Comprehension of the Terms Negative Order and Fractional Order in the Field of Chemical Kinetics, R. Sanjeev , V. Jagannadham, Adam A Skelton, R. Veda Vrath, <i>World Journal Chemical Education</i> , (2014), vol. 2, pages 4-7, UGC-CARE indexed DOI:10.12691/wjce-2-1-2
32	Demonstration of isosbestic point and determination of lifetime of benzyl-gem-diacetate in water: A novel experiment, R. Sanjeev , V. Jagannadham and R. Veda Vrath, ISSN 0110-5566 <i>ChemEdNZ</i> (New Zealand Journal of Chemical Education) (2012) November issue page 12.
33	Implications of a novel interpretation of the isosbestic point, R. Sanjeev , V. Jagannadham and R. Veda Vrath, <i>Chemistry in New Zealand</i> (2012) October issue page 133.
34	Identification of Site of Attack and the Reaction Path in the Oxidation of 3,5-Dimethyl-4-Nitroisoxazole by $Tl(III)$, R. Sanjeev , V. Jagannadham and R. Veda Vrath, ISSN 0110-5566 <i>ChemEdNZ</i> (New Zealand Journal of Chemical Education) (2012) August issue page 7-9.
35	Out of the ordinary applications of steady state approximation: One hour classroom lecture for senior undergraduate and graduate students, R. Sanjeev , V. Jagannadham and R. Veda Vrath, <i>ChemEdNZ</i> , (New Zealand Journal of Chemical Education) (2012) May issue, pages 8-10
36	Hammett equation - A tool for the identification of the site of reaction in aromatic systems: One hour classroom lecture for physical organic chemistry graduate students, V. Jagannadham, R. Sanjeev and R. Veda Vrath, <i>ChemEdNZ</i> , (New Zealand Journal of Chemical Education

37	Direct Oxidation of Esters and Their Path Established by Stoichiometry, Product Analysis and Taft-Pavelich Four-Parameter Relationship, R. Sanjeev , V. Jagannadham, R. Veda Vrath and R. Ravi, <i>QScience Connect, Bloomsbury Qatar Foundation Academic Journal</i> (2013) Paper No. 36 Link:, DOI: https://doi.org/10.5339/connect.2013.36
38	Attenuation effect through methylene group: Part II, R. Sanjeev, V. Jagannadham, and R. Veda Vrath, <i>Bulgarian Chem. Commns.</i> , (2014) vol. 46, page 375-377, Impact factor = 0.32. Web of Science and Scopus Indexed http://www.bcc.bas.bg/index.html
39	Demonstration of Isosbestic Point: A Novel Experiment, R. Sanjeev , V. Jagannadham, and R. Veda Vrath, <i>Chemical Education Journal</i> (CEJ), Japan, Vol. 14, No. 2, The date of issue: February 19, 2013/Registration No. 14-8. URL = http://chem.sci.utsunomiya-u.ac.jp/cejrnE.html
40	Non-Linear Taft Polar Free Energy Relationship (TPFER): Reactions of N-Substituted Benzyl Amines with Benzyl Bromide in Methan, R. Ravi, R. Sanjeev and V. Jagannadham, <i>International Journal of Chemical Kinetics</i> , (2013) https://doi.org/10.1002/kin.20818 , Vol. 45, pages 803-810 Journal issue 12, (UGC recognized Journal) SCI indexed Impact factor = 1.74
41	Lifetime of benzyl-gem-diacetate in aqueous solution, R. Sanjeev , V. Jagannadham, D. Dhiman, <i>Bulgarian Chemical Communications</i> , Vol. 43, (3), pp. 465-466, (2011), SCI indexed Impact factor = 0.33
42	The Marvelous Marcus equation: Distinguishing inner-sphere electron transfer reactions from outer-sphere electron transfer reactions: A one hour graduate class-room lecture. R. Sanjeev and V. Jagannadham, <i>Bulgarian Chemical Communications</i> , (2011) vol. 42, page 383-394. SCI indexed Impact factor 0.33.
43	Why benzyl-gem-diacetate is remarkably stable in aqueous solution? V. Jagannadham, D. Annapurna Padmavathi, and R. Sanjeev , <i>International Journal of Chemical Kinetics</i> , (2009) vol. 41, page 554. SCI indexed Impact factor 1.74
44	Lifetimes of α -halo and α -azidobenzyl carbocations in aqueous solution. R. Sanjeev and V. Jagannadham, <i>Indian Academy of Sciences</i> (2002) 114, 47, SCI indexed impact factor = 1.3.
45	Substituent effects on the spontaneous cleavage of benzyl-gem-dichlorides in aqueous solution. R. Sanjeev and V. Jagannadham <i>Indian J. Chemistry</i> , (2002) 41B, 2145, SCI indexed Impact factor = 0.6
46	Effect of α -halogen atom and α -azido group on thermodynamic stability and kinetic reactivity of benzyl carbocations in aqueous solution. R. Sanjeev and V. Jagannadham . <i>Indian J. Chemistry</i> (2002) 41B, 2150, SCI indexed Impact factor = 0.6
47	Substituent effects on the spontaneous cleavage of benzyl-gem-dibromides in aqueous solution. R. Sanjeev and V. Jagannadham <i>Indian J. Chemistry</i> , (2002) 41A, 1841, SCI indexed impact factor =0.49.
	Total number of research articles published is 85. All the articles are not displayed here.

Books/Book Chapters Published:

S. No.	Publication details (Nil)

Experience:

Teaching (post PhD)	21 years (Ethiopia, Eritrea and India)
Industry	6 months
Research	23 (South Africa, Ethiopia and India)
Total Experience	23 years

