

CURRICULUM VITAE

I. Personal data

1. Name : **Dr. GANGU GANGADHAR REDDY**
2. Designation : **Professor**
3. Nationality : **Indian**
4. Date of birth : **21st March 1960**
5. Address for Correspondance : **Department of Physics
Kakatiya University
Warangal – 506 009
Telangana State, India**
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9441680795**

II. Academic degrees obtained

Year	Name of the Degree	Name of the University	Place, Country	Subjects of Examination
1980	B.Sc.	Osmania University	Hyderabad India	Maths, Physics & Chemistry
1983	M.Sc.	Kakatiya University	Warangal India	Physics
1988	Ph.D.	Kakatiya University	Warangal India	Physics

III. Stages of University education

Period	Name of the University	Place, Country	Main Subjects
1977-80	Osmania University	Hyderabad India	Maths, Physics & Chemistry
1980-88	Kakatiya University	Warangal India	Physics

IV. Professional background

Period	Position	Name and place of the Institution
1984 – 1988	Research Student	Department of Physics, Kakatiya University Warangal – 506 009, India
1988 – 1991	Research Associate	Department of Physics, Kakatiya University Warangal – 506 009, India
1991 – 2000	Assistant Professor	Department of Physics, Kakatiya University Warangal – 506 009, India
2000 – 2008	Associate Professor	Department of Physics, Kakatiya University Warangal – 506 009
2008 – Till date	Professor	Department of Physics, Kakatiya University Warangal – 506 009

V. Previous periods of work, study and research in abroad

Period	Name and place of the institution	Purpose	Financed by	Name and address of scientific mentor
July 1989 – Aug. 1989	International Centre for Theoretical Physics, Trieste, Italy	Research	ICTP	Prof. G. Baskaran Institute for Mathematical Sciences Chennai, India
Nov. 1992 – March 1993	Goethe Institute Göttingen, Germany	To learn Deutsch	DAAD	----
April 1993 – March 1994	Universität Duisburg Duisburg, Germany	Research	DAAD	Prof. P. Entel Tiefenphysik Universität Duisburg
Dec. 1999 – Jan. 2000	Humboldt University Berlin, Germany	Research	DAAD	Prof. W. Nolting Humboldt University Berlin, Germany
Oct. 2000	Humboldt University Berlin, Germany	Research	Volkswagen Foundation Germany	Prof. W. Nolting Humboldt University Berlin, Germany
Nov. 2000 – Dec. 2000	Universität Duisburg Duisburg, Germany	Research	SFB Germany	Prof. P. Entel Tiefenphysik Universität Duisburg
April 2005 – May 2005	Humboldt University Berlin, Germany	Research	DAAD	Prof. W. Nolting Humboldt University Berlin, Germany
May 2008 June 2008	Humboldt University Berlin, Germany	Research	DAAD	Prof. W. Nolting Humboldt University Berlin, Germany

VI. Research projects carried out:

S.No.	Title of the Project	Name of the Funding Agency	Duration	Remarks
1	Field Induced Valence Transition in Fluctuating Valence Compounds	UGC, New Delhi	01-04-1988 to 31-03-1999	Completed
2	Magnetic Phase Diagram of Kondo Lattice	Volkswagen Foundation, Germany	01-05-1999 to 30-04-2004	Completed
3	Electronic Structure and Magnetic Properties of Cuprates and Manganites	CSIR, New Delhi	27-01-2000 to 28-01-2003	Completed
4	Interplay of Structural and Magnetic Transitions with Reference to Manganites	CSIR, New Delhi	01-04-2006 to 31-03-2010	Completed
5	Mutual Effects of Magnetic and Structural Transition in Strongly correlated Electron Systems	CSIR, New Delhi	01-04-2010 to 31-03-2014	Completed

VII. Administrative posts held :

Chairman Board of Studies in Physics for a period of **two** years **one** month

VIII. Number of students obtained doctoral degree :

One student obtained doctoral degree

IX. Field of research work :

The main aim of the research work is to investigate theoretically the magnetic properties of local moment systems. For this purpose the theoretical models used are i) The Hubbard model ii) The periodic Anderson model iii) Falicov-Kimball model iii) Kondo lattice model and iv) Correlated Kondo lattice model. The main many-body technique used is the Zubarev's Greens functions technique for the equation of motion method. The theoretical models can not be solved exactly. The approximate solutions have been found by using mean field approximation, spectral density approach and alloy analogy. The physical quantities calculated are the density of states, band occupancies, spontaneous magnetization, internal energy, specific heat, static magnetic susceptibility, and Curie temperature as functions of the model parameters.

LIST OF PUBLICATIONS

- 01 Calculation of Charge-Charge Correlation for Mixed Valence Compounds using Periodic Anderson Model
G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **27C**, 309 (1984)
- 02 Coexistence of Magnetism and Mixed Valence
G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **28C**, 184 (1985)
- 03 Collective Magnetic Order and Intermediate Valence in the Anderson Model
G. Gangadhar Reddy and A. Ramakanth
Phys. Stat. Solidi (b) **138**, 171-179 (1986)
- 04 On the Static Magnetic Susceptibility of Intermediate Valence Compounds in the Anderson Model with Particle-hole Attraction
G. Gangadhar Reddy and A. Ramakanth
Physica **B 147**, 223-230 (1987)
- 05 Magnetic Order and Mixed Valence in 4f-systems
G. Gangadhar Reddy
Physics Teacher., India, **29**, 24 (1987)
- 06 Effect of Excitonic Correlations on Magnetic Order in Mixed Valence 4f-systems
G. Gangadhar Reddy and A. Ramakanth
"Theoretical and Experimental Aspects of Valence Fluctuations and Heavy Fermions" Edited by L.C. Gupta and S.K. Malik, Plenum, New York (1987) 600pp.
- 07 Long Range Magnetic Order with Valence Instabilities
G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **31C**, 248 (1988)
- 08 Re-entrant type of Magnetic Behaviour in the Anderson Model
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
Proceedings of the Solid State Physics Symposium, India, **32C**, 184 (1989)
- 09 Ground State Properties of a Model for Mixed Valence Systems
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **32C**, 219 (1989)
- 10 Non-linear Magnetic Response of Intermediate Valence State
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
Solid State Commun. **71**, 395-399 (1989)
- 11 Effect of Hybridization on T_C in the Anderson Model
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **33C**, 42, (1990)
- 12 On the Semiconductor-metal Transition in a Model for Mixed Valence Systems
G. Gangadhar Reddy and A. Ramakanth
J. Phys. Chem. Solids **51**, 515-522 (1990)
- 13 Magnetic Properties of the Anderson Model with Particle-hole Attraction
G. Gangadhar Reddy and A. Ramakanth
Physica **B 162**, 74-82 (1990)

- 14 Re-entrant and Spin-glass Like Behaviour of the Anderson Model
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
J. Phys. Condens. Matter **2**, 10475-10486 (1990)
- 15 Magnetic Ordering in The Anderson Model : Strong Coupling Limit
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **34C**, 104 , (1991)
- 16 Thermal expansion of Mixed Valence Compounds
G. Gangadhar Reddy and A. Ramakanth
Solid State Commun. **78**, 133-136 (1991)
- 17 Ground State Properties of the Periodic Anderson Model
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Solid State Commun. **81**, 795-800 (1992)
- 18 Electronic contribution to Thermal Expansion of a Mixed Valence systems
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the Solid State Physics Symposium, India, **35C**, 242 (1992)
- 19 Nonlinear Magnetic Response of the Highly Correlated Anderson Lattice
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Phys. Stat. Solidi (b) **177**, 493-500 (1993)
- 20 Anamolous Behaviour of the Coefficient of the Thermal Expansion in Intermediate Valence Systems
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
Solid State Commun. **87**, 157-159 (1993)
- 21 Finite Temperature Magnetic Properties of the Highly Correlated Anderson Lattice
T. Venkatappa Rao, G. Gangadhar Reddy and A. Ramakanth
J. Phys. Chem. Solids **55**, 175-183 (1994)
- 22 First-Principles Investigations of Atomic Disorder Effects on Magnetic and Structural Instabilities in Transition Metal Alloys
M. Schroter, E. Ebert, H. Akai, P. Entel, H. Hoffmann and G. G. Reddy
Phys. Rev. **B52**, 188-209 (1995)
- 23 Effective Medium Approach to Periodic Anderson Model: Quasi-Particle Density of States
G. Gangadhar Reddy, A. Ramakanth and W. Nolting
Proceedings of the Solid State Physics Symposium, India, **40C**, 95 (1997).
- 24 A Study of Correlation Effects on the Collective Ordering of Rare-Earth Systems
A. Ramakanth, G. Gangadhar Reddy and W. Nolting
Proceedings of the Solid State Physics Symposium, India, **40C**, 132 (1997).
- 25 Ferromagnetism within the Periodic Anderson Model: A New Approximation Scheme
D. Meyer W. Nolting, G.G. Reddy and A. Ramakanth
Physica Status Solidi (b) **208**, 473-495 (1998).
- 26 Ferromagnetism in the Periodic Anderson Model: A Modified Alloy Analogy Approximation
A. Ramakanth, G. Gangadhar Reddy and W. Nolting
Proceedings of the Solid State Physics Symposium, **42**, 501-502 (1999)
- 27 f-Band Ferromagnetism in the Periodic Anderson Model : A Modified Alloy Analogy
G. G. Reddy, D. Meyer, S. Schwiser, A. Ramakanth, A. and W. Nolting
J. Phys. Condensed Matter **12**, 7463-7484 (2000).

- 28 Local Moment Ordering in Periodic Anderson Model
A. Ramakanth, W. Nolting, G. G. Reddy, D. Meyer and S. Schwiser
Int. Journal of Modern Physics **B15**, 2583-2594 (2001).
- 29 Low-density Approach to the Kondo-lattice Model
W. Nolting, G. G. Reddy, A. Ramakanth, and D. Meyer
Phys. Rev. **B 64**, 155109-155118 (2001).
- 30 Spectral Density Approach to the Double Exchange Model
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
Solid State Commun. **120**, 325-329 (2001).
- 31 Magnetic-field-induced Valence Transition in Rare-earth Systems
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
Pramana Journal of Physics **58**, 773-776 (2002).
- 32 Interpolation Formula for Self-energy in the Kondo-Lattice Model
W. Nolting, G.G. Reddy, A. Ramakanth and D. Meyer
Presented at *International Symposium on Advances in Superconductivity & Magnetism: Materials, Mechanisms & Devices* held at Mangalore University, Mangalore, India during September 25-28, 2001
- 33 Self-energy Approach to the Correlated Kondo-lattice Model
W. Nolting, G.G. Reddy, A. Ramakanth and J. Kienert
Phys. Rev. **B67** 024426-0244334 (2003)
- 34 Ferromagnetism in the Hubbard Model: A modified Perturbation Theory
G. Gangadhar Reddy, A. Ramakanth and W. Nolting
Proceeding of the DAE Solid State Physics Symposium, India **46**, 823-824 (2003).
- 35 Magnetic Phase Diagram of the Low-density Ferromagnetic Kondo Lattice
W. Nolting, A. Ramakanrh, M. Lipowczan and G. G. Reddy
Proceeding of the DAE Solid State Physics Symposium, India **46**, 825-826 (2003).
- 36 Temperature- and Field- Induced Valence Transition in a Model for Intermediate Valence Systems
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
Int. Journal of Modern Physics **B18**, 1161-1177 (2004)
- 37 Carrier Induced Ferromagnetism in Concentrated and Diluted Local-moment Systems
W. Nolting, T. Hickel, A. Ramakanrh, G. G. Reddy and M. Lipowczan
Phys. Rev. **B70** 075207-075214 (2004).
- 38 Ground State Magnetic Phase Diagram of Dilute Local-moment System
G. Gangadhar Reddy, A. Ramakanth and W. Nolting
Proceeding of the DAE Solid State Physics Symposium, India **50**, 637-638 (2005).
- 39 Influence of Jahn-Teller Effect on Kondo-lattice model
G. Gangadhar Reddy, A. Ramakanth, S.K. Ghatak, S.N. Behera, W. Nolting and T. Venkatappa Rao
Proceeding of the DAE Solid State Physics Symposium, India **50**, 639-640 (2005).
- 40 Model of the Interplay of Band Jahn-Teller Effect with Magnetic Order Mediated by Exchange Interactions
G. Gangadhar Reddy, A. Ramakanth, S.K. Ghatak, S.N. Behera, W. Nolting and T. Venkatappa Rao

- Phys. Rew. **B74** 134403-134408 (2006).
- 41 Influence of Magnetic Ordering on Jahn-Teller Distortion in Kondo Lattice Model
G. Gangadhar Reddy, T. Venkatappa Rao, A. Ramakanth and W. Nolting
Proceeding of the DAE Solid State Physics Symposium, India **52**, 1113-1114 (2007).
 - 42 Reentrant Like Band Jahn-Teller Effect and its Field Dependence
G. Gangadhar Reddy, T. Venkatappa Rao, A. Ramakanth, S.K. Ghatak and S.N. Behera
Int. Journal of Modern Physics B. 22 423-434 (2008).
 - 43 Electrical Transport in Quantum Dot
G. Gangadhar Reddy, A. Ramakanth and S.K. Ghatak
AIP Conf. Proc. **1063** 35-39 (2008).
 - 44 Magnetic Phase Diagram of the Kondo Lattice Model.
L. Haritha, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the DAE Solid State Physics Symposium, **54**, 981 (2009.)
 - 45 Influence of Magnetic Order on Structural Distortion: A Model Calculation.
L. Haritha, G. Gangadhar Reddy and A. Ramakanth
Proceedings of the DAE Solid State Physics Symposium, **54**, 987 (2009).
 - 46 Interplay of Magnetic Order and Jahn-Teller Distortion in a Model with Strongly Correlated Electron System.
L. Haritha, G. Gangadhar Reddy, A. Ramakanth, S.K. Ghatak and W. Nolting
Physica **B 405**, 1701 (2010).
 - 47 Influence of Magnetic Order on Structural Distortion in Local Moment Systems.
L. Haritha, G. Gangadhar Reddy and A. Ramakanth
AIP Conf. Proc. **1347**, 252-253 (2011).
 - 48 On the Possibility of Ferromagnetism and Half-metallicity in Local Moment Systems.
L. Haritha, G. Gangadhar Reddy and A. Ramakanth
Modern Physics Letters **B 25**, 1701-1712 (2011).
 - 49 Interplay between Magnetic Order and Electrical Resistivity in Local Moment Manganites.
L. Haritha, G. Gangadhar Reddy A. Ramakanth and s.K. Ghatak
AIP Conf. Proc. **1461**, 267-268 (2012).
 - 50 Influence of band Jahn-Teller distortion on the magnetoresistance in manganites
L. Haritha, G. Gangadhar Reddy and A. Ramakanth
AIP Conf. Proc. **1512**, 1078-1079 (2013)
 - 51 Dispersion Study of Plane Strain Vibrations in Poroelastic Solid Cylinder with Polygonal Cross Section
B. Sandhya Rani, P. Malla Reddy and G. Gangadhar Reddy
Mathematics and Mechanics of Solids *March 2, 2015* 1081286515571785