

Curriculum Vitae



NAME	Dr. K. VENKATA RAO M.Sc., M.Phil., Ph.D.
DESIGNATION	ASSOCIATE PROFESSOR
AFFLIATION	Department of Physics Govt. Degree College, Porumamilla, Kadapa district-516193, India Mobile: +91 9441744263, +91 7013782802 Email: drvenkatarao@gmail.com
DATE OF BIRTH	25 th March 1979
CITIZENSHIP	Indian

PROFESSIONAL EXPERIENCE

Assistant Professor, Dept. of Physics, S.B.V.R. Degree College, Badvel, Kadapa dt. A.P. (2009-2021)

Assistant Professor, Dept. of Physics, Govt. Degree College, Porumamilla, Kadapa dt, A.P. (2021- Till date)

EDUCATION QUALIFICATIONS

B. Sc Maths, Physics, Chemistry	J. B Degree College, Kavali, 2001
M. Sc. Physics	S.V.U P. G Center, Kavali 2004
M. Phil. Physics (“Solid-State Spectroscopy”)	S.V.U P. G Center, Kavali 2008
Ph.D. (“Spectroscopic Investigations on Rare Earth Doped Glasses”)	S.V University, Tirupati, A.P. 22 nd June 2011

TEACHING EXPERIENCE	15 Years
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RESEARCH ACTIVITY

1. 15 Years of Research Experience in Lanthanide Spectroscopy

2. Reviewer in five International Journals

- (A). Journal of Alloys and Compounds,
(B). Journal of Molecular Structure
(C). Journal of Material Science (Springer)
(D). Journal of Materials Today Communication
(E). Journal of Ceramics International

RESEARCH PUBLICATIONS

24 Research Papers have been published in National / International Journals

RESEARCH PROJECT

Minor Research Project (UGC-MRP) F. No-4161/12 Settled, 2015, April (Rs 2, 00,000)

No. of Research Scholars under Guidance

04

**ATTENDED NATIONAL/
INTERNATIONAL/**

SEMINARS/WORKSHOPS/ CONFERENCES 30

PROFESSIONAL COLLABORATION**Life Member**

1. Indian Science Congress Association (ISCA-KOLKOTHA) No- L24719
2. International Association of Advanced Materials (IAAM) No-793251911307
3. Rare Earth Association of India (REAI)

LIST OF PUBLICATIONS

1. Spectroscopic Evaluation of Ho³⁺-incorporated Alkali and Alkaline Zinc Fluorophosphate Glasses: Potential for Visible Green Emission Applications. Babu, B. Bujji, S. Vidya Sagar, **K. Venkata Rao**, C. Venkateswarlu, N. V. Srihari, and S. K. Annar.
Journal of Luminescence (2025): 121130.
2. Structural analysis of zinc phosphate glasses doped with different concentrations of Dy³⁺ ions for WLED applications. Sagar, S. Vidya, **K. Venkata Rao**, G. Pullaiah, and B. Bujji Babu
AIP Conference Proceedings, vol. 3198, no. 1. AIP Publishing, 2025.
3. Erbium doped P₂O₅-BiF₃-MgO-ZnO-KF glasses for green laser applications B C Jamalaiah, **K Venkata Rao**, S Vidya Sagar, C Balanarayana, N V Srihari and P Shahab Khan
Phys. Scr. 100 (2025) 015996
4. Novel reddish-orange emitting BaBPO₅:Eu³⁺ phosphor for n-UV warm white-LEDs: Synthesis and study of structural and spectroscopic investigations
T. Chandra Mohan, T. Raghu Raman, **K. Venkata Rao**, P. Sai Dinesh, Y.C. Ratnakaram

Optik-International Journal for light and electron optics 318 (2024) 172103

5. Dy³⁺ ions in fluorophosphate glasses for luminescent white light applications
K Venkata Rao, S Vidya Sagar, N V Srihari and Sanjay J Dhoble
J. Phys. B: At. Mol. Opt. Phys. 57 (2024) 235402 (12pp)
6. An emission analysis of a novel trivalent Eu³⁺ ion-doped zinc phosphate glass for photonic applications
S. Vidya Sagar; S. Babu; **K. Venkata Rao**
AIP Conf. Proc. 3149, 080007 (2024)
7. Comprehensive study of trivalent Dy³⁺ ions-incorporated zinc phosphate glasses for white light emission in solid-state photonic devices
S. Vidya Sagar · **K. Venkata Rao** · S. Babu · SK. Annar
Journal of Optics (2024)
8. Sensitizing effect of Yb³⁺ ions on 1.53μm broadband and 548 nm up conversion green emissions of Er³⁺ -doped TeO₂-WO₃-GeO₂ glasses
B.C. Jamalaiah, Sk. Nayab Rasool, **K. Venkata Rao**, K. Pavani, M.J. Soares, G. Viswanadha
Journal of Materials Research Bulletin 171 (2024) 112628
9. Emission spectroscopy of Sm³⁺ ion-activated zinc phosphate glass for reddish-orange lighting applications
S. Vidya Sagar, S. Babu, **K. Venkata Rao**
Journal of Materials Science: Materials in Electronics, Springer (2023) 34:2216.
10. Green emission characteristics of Er³⁺ -doped TeO₂-WO₃-GeO₂ glasses through up and down conversion processes
G. Pullaiah, **K. Venkata Rao**, B.C. Jamalaiah, A. Surya Narayana Reddy.
Journal of Non-Crystalline Solids 615 (2023) 122413
11. Bi₂O₃-B₂O₃-CaF₂-EuF₃ glass-ceramics for lighting applications
B. C. Jamalaiah, N. Madhu, Shaik Anwar, **K. Venkata Rao**, K. Pavani
Journal of Materials Science: Materials in Electronics, Springer (2023) 34:803.
12. Spectroscopic and luminescent properties of Ce³⁺ doped TeO₂-WO₃-GeO₂ glasses
G. Pullaiah, **K. Venkata Rao**, B.C. Jamalaiah, N. Madhu, N. Venkatramaiah
Journal of Material Science & Engineering B 284 (2022) 115879
13. Enhanced red luminescent PBTNAEu glasses for solid state lasers.
B.C. Jamalaiaha, N. Madhu, **K. Venkata Rao**, G. Viswanadha and D.V. Raghu Ram
Journal of Luminescence 223 (2020) 117200
14. Comparative impact of Nd³⁺ ion doping concentration on near-infrared laser emission in lead borate glassy materials
K. Venkata Rao, S. Babu, C. Balanarayana and Y.C. Ratnakaram
Journal of Optik 202 (2020) 163562
15. Rich reddish-orange emitting PBTNAPr glasses for laser applications.

B.C. Jamalaiaha, G. Viswanadhaa and **K. Venkata Rao**
Journal of Optical Materials 96 (2019) 10340

16. visible properties of Sm^{3+} ions in chloro-fluro-borate glasses for reddish-orange emission
K. Venkata Rao*, S. Babu, B. Venkata Rao and Y.C. Ratnakaram
AIP Conf.Pro.1731, 07003-1-07003-3 (2016), Doi:10.1063/1.4947835.
17. Impact of dysprosium concentration on luminescence properties of zinc phosphate glasses for photonic applications
B. Venkata Rao, R. Jeevan Kumar and **K. Venkata Rao***,
International Journal of recent scientific research 14390-14395 (2016).
18. Optical spectroscopy of Dy^{3+} doped borate glasses for luminescence applications
K. Venkata Rao*, S. Babu, G. Venkataiah and Y.C. Ratnakaram
Journal of Molecular Structure 1094 (2015) 274-280.
19. A Photoluminescence Study of Nd^{3+} Doped Different Chloro-phosphate Glasses for Solid State Laser Applications.
K. Venkata Rao, Y.C. Ratnakaram
International journal of Nanotechnology and application (**IJNA**)Vol.4, 2278-9391 (2014).
20. "Laser analysis of Ho^{3+} doped different chloro-phosphate glasses"
K. Venkata Rao, S. Babu and Y.C.Ratnakaram
International journal of Nanotechnology and application (**IJNA**) Vol.4, 2278-4777 (2014).
21. Emission properties of Eu^{3+} doped different chlorophosphate glasses"
K. Venkata Rao, M. Seshadri and Y.C. Ratnakaram
AIP Conf.Pro.1349, 531-532 (2011), Doi: 10.1063/1.3605967.
22. Optical and luminescence studies of Pr^{3+} and Er^{3+} doped different Phosphate glasses.
K. Venkata Rao, Y.C. Ratnakaram, M. Seshadri and J.L. Rao
Journal of Physica B 405 (2010) 2297-2304.
23. Spectroscopic investigations and luminescence spectra of Nd^{3+} and Dy^{3+} doped different phosphate glasses.
M. Sheshadri, K. Venkata Rao, J. Laxmana Rao, K.S.R Koteswara Rao, Y.C Ratnakaram
Journal of Luminescence". 130 (2010) 536-543.
24. Investigations of spectroscopic properties (absorption and emission) of HO^{3+} doped alkali, mixed alkali and calcium phosphate glasses.
M. Seshadri, Y.C. Ratnakaram, D. Thirupati Naidu and **K. Venkata Rao**
Optical Materials 32 (2010) 535-542
25. Spectroscopic properties and Judd-Ofelt analysis of Sm^{3+} and Dy^{3+} doped chlorophosphate glasses.
K. Venkata Rao, M. Seshadri, C. Venkateswarlu and Y.C. Ratnakaram

IOP Conf. Series: Materials Science and Engineering 2 (2009) 012045.

26. Optical spectra and Judd-Ofelt analysis of Pr^{3+} and Er^{3+} in different phosphate glasses.
M. Seshadri, **K. Venkata Rao**, G.N. Hemantha Kumar and Y.C. Ratnakaram
IOP Conf. Series: Material Science and Engineering 2 (2009) 012032.

27. Spectroscopic and laser properties of Sm^{3+} doped different phosphate glasses.
M. Seshadri, **K. Venkata Rao**, J.L. Rao and Y.C. Ratnakaram
Journal of Alloys and Compounds 476 (2009) 263-270.

LIST OF PAPERS PRESENTED IN INTERNATIONAL & NATIONAL CONFERENCES

1. Optical properties of Nd^{3+} doped oxy Fluoro phosphate glasses for photonic applications.
K. Venkata Rao, S. BABU and Y.C. Ratnakaram

International seminar on luminescence and materials [ISLM-2016] 7th January 2016 which
was held at Dept. of Physics, DSGDC for Women, Ongole, A.P

2. Visible Properties of Sm^{3+} Ions in Chloro-Fluoro-Borate Glasses for Reddish-Orange
Emission

K. Venkata Rao, S. Babu, B. Venkata Rao, Y. C. Ratnakaram

60th DAE SSPS-2015, which was held on Dec-21-25, Amity University, NOIDA, U.P.

3. Photoluminescence properties of Eu^{3+} doped lead fluoroborate glasses

K. Venkata Rao, S. Babu, B. Venkata Rao, Y. C. Ratnakaram

National seminar on advanced in material science [NSAMS-2015] 25th & 26th November
2015 which was held at Dept. of Physics, Acharya Nagarjuna University, Guntur, A.P.

4. Structural and Optical properties of Pr^{3+} doped lead Fluoro Borate glasses

K. Venkata Rao*, S. Babu, C. Venkateswarulu and K.A. Jamal basha

International conference on science and tecnology and applications of rare earth (ICSTAR
2015), Trivendrum, Kerla, India, during Aprial , 23-25, 2015.

5. Advantages of polymers and hybrid glass polymer optics.

K. Venkata Rao, K.V.Subba Reddy and S. Subbarayudu

National seminar on new trends in polymer chemistry and characterization (NTPC-2015)

S.B.V.R.Degree college, Badvel, Y.S.R.Kadapa dist, A.P during April 19th , 2015.

6. Luminescence properties of Er^{3+} doped lead borate glasses

K. Venkata Rao, Y.C. Ratnakaram and A. Balakristana

“National seminar on advances in material science and nano technology (AMNT-2015)”,
S. B.V.R. Degree College, Badvel, Y.S.R. Kadapa DIST., A.P during April 5th, 2015

7. “Spectroscopic properties and Judd-Ofelt analysis of Sm^{3+} doped chlorophosphate
glasses”.

K. Venkata Rao, M. Seshadri, C. Venkateswarlu and Y.C. Ratnakaram

“International National Seminar on Science and Technology of Glass Materials” (ISSTGM-
2009) held at Nagarjuna University, Guntur during March 16-19, 2009).

8. Optical and luminescence studies of Pr^{3+} and Er^{3+} doped different Phosphate glasses”.

K. Venkata Rao, Y.C. Ratnakaram, M. Seshadri and J.L. Rao

“National Conference on Materials Energy Storage and Conversion” *NCMESC-2010*) held at
Sri Venkateswra University, Tirupati during January 23-24, 2010).

9. Emission properties of Eu^{3+} doped different chlorophosphate glasses”

- K. Venkata Rao**, M. Seshadri and Y.C. Ratnakaram
“55th DAE Solid State Physics Symposium” (SSPS-2010) held at Manipal University,
Manipal, Karnataka during December 26-30, 2010.
10. Spectroscopic properties of Tm^{3+} doped chloro Phosphate glasses
K. Venkata Rao, B. Venkata Rao, D. Thirupati Naidu and Y.C. Ratnakaram
“National seminar on recent developments in Physics (NSRDP-2015)”, Sri Krishnadevaraya
University, Anantapuram A.P during March 26-27, 2015.
11. Structural and spectroscopic studies on Er^{3+} doped lead fluoro borate glasses
K. Venkata Rao, S. Babu and K.A. Jamal Basha
“National conference on recent trends in material science (RTMS-2015)”, S.V. Degree
College, Kadapa, Y.S.R.DIST., A.P during March 1-2, 2015.
12. Spectroscopic investigations on rare earth doped Ho^{3+} doped lead boro phosphate
glasses
K. Venkata Rao, K. V. Subba Reddy, S. Subbarayudu and B. Venkata Rao
“National conference on recent advances in material science (NCRAM-2014), Loyola Degree
College, Pulivendula, Y.S.R.DIST., A.P during November 1-2, 2014
13. Optical absorption and luminescence properties of Sm^{3+} doped lead borate glasses
K. Venkata Rao, S. Babu and Y.C. Ratnakaram
“International National Seminar on Science and Technology of Glass Materials” (ISGFM-
2014) held at Acharya Nagarjuna University, Guntur during March 11-13, 2014.
14. Structural, Optical absorption and emission properties of Nd^{3+} doped different lead
fluoro borate glasses
K. Venkata Rao, and C. Venkateswarlu
“DAE-BRNS National Laser Symposium (NLS-23)” which held at Dept. of Physics, S.V.
University, Tirupati, during December 03-06, 2014.
15. Spectroscopic Investigations on rare earth doped Ho^{3+} doped different lead borate
glasses.
K. Venkata Rao, K.V. Subba Reddy, S. Subbarayudu and B. Venkata Rao
“Recent Advances in Material Science National” (NCRAM-2014) which held at Loyola
Degree College, Pulivendula, A.P, during November 01-02, 2014.
16. Spectroscopic properties of Nd^{3+} doped different chlorophosphate glasses
K. Venkata Rao and Y.C. Ratnakaram
“National conference on Emerging Nano Materials” (NCENM-2014) which held at Sri
Krishna devaraya University, Anantapuram during March 21-22, 2014.
17. Concentration effect of Dy^{3+} ion on photoluminescence properties in oxy Fluoro-borate
glasses
K. Venkata Rao, S. Babu, A. Balakrishna and Y.C. Ratnakaram
“A.P. Science Congress-2013” which held at University of Hyderabad, Hyderabad during
November 14-16, 2013.
18. Photoluminescence properties of Ho^{3+} doped different chlorophosphate glasses
K. Venkata Rao and Y.C. Ratnakaram
“International conference on Emerging Trends in Physics” (ICETP) which was held at St.
Joseph’s College of Arts & Science (Autonomous) Cuddalore-1, Tamil Nadu, India during
Feb- 21-22, 2013.
19. Characterization of HO^{3+} doped alkali, mixed alkali and calcium Phosphate glasses.
Y.C. Ratnakaram, M. Seshadri , D. Thirupati Naidu and **K. Venkata Rao**
“DAE Solid State Physics Symposium” (SSPS-2008) which was held at BARC, Mumbai
during December 16-20, 2008
20. Spectroscopic investigations and luminescence spectra of Dy^{3+} doped different
phosphate glasses.

M. Seshadri, **K. Venkata Rao**, J. Lakshmana Rao, and Y.C. Ratnakaram
“DAE Solid State Physics Symposium” (SSPS-2009) which was held at Maharaja Sayajirao
University of Baroda, Vadodara during December 14-18, 2009.

21. The Indian Science Congress Association (ISCA-2023) at RTM Nagpur University,
Maharashtra, 3-7, January 2023.

22. Green emission characteristics of Er^{3+} doped $\text{TeO}_2\text{-WO}_3\text{-GeO}_2$ glasses through up and
down conversion process

G. Pullaiah, **K. Venkata Rao**, B. Bujji babu

“International conference on Rare earths for Energy Security (REES-2023)” jointly
organized by rare earth association of India and IIM-Mumbai chapter during August
17-18, 2023 at Goa.

23. Structural and spectroscopic study of Dy^{3+} ions doped zinc phosphate glasses for
emission of white light for solid state lighting devices

S. Vidya Sagar, **K. Venkata Rao**, S. Babu, S. Naresh

“International conference on Rare earths for Energy Security (REES-2023)” jointly
organized by rare earth association of India and IIM-Mumbai chapter during August
17-18, 2023 at Goa.

LIST OF PARTICIPATED NATIONAL SEMINAR/WORKSHOPS

24. Three-day national workshop on “Human Values and Professional Ethics”,
Loyola Degree College, Pulivendula, Kadapa, A.P. On 26th Jan 2016.

25. One day workshop on spectroscopy, department of chemistry, VSU, Nellore, A.P. On
8th 2014.

26. National seminar on sustainable development and biotechnology J.B. Degree college,
Kavali on 24th, October 2010.A.P.

27. National seminar on emerging materials and technologies (EMT-2010) On 9-10th Oct-
2010, SSBN Degree & PG College, Anantapur-A.P.

28. Two-day national conference on novel materials for Sustainable development (NMSD-
2023) on 15th and 16th March 2024, Government Degree College, Porumamilla