



**GOVT. DEGREE COLLEGE. PORUMAMILLA,  
KADAPA DIST, 516197 A.P., INDIA**



**NAME** : Dr. K. VENKATA RAO, M.Sc., M.Phil., Ph.D.,

**DESIGNATION** Assistant Professor

**AFFILIATION** Department of Physics  
GOVT. DEGREE COLLEGE  
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**DATE OF BIRTH** 25<sup>th</sup> March 1979

**CITIZENSHIP** Indian

**PROFESSIONAL EXPERIENCE**

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

Govt. Degree College, Porumamilla, Kadapa dt, A.P. (2021-  
Till date)

## **EDUCATIONAL QUALIFICATIONS**

**B.Sc. Mathematics, Physics &  
Chemistry**

**J.B. Degree College, Kavali, 2001**

**M.Sc. Physics      M.Phil. Physic**

**S.V.U. P.G Center, Kavali, 2004**

**(“Solid State Spectroscopy”)**

**S.V.U.P.G. Center, Kavali, 2008**

**s**

**Ph.D.**

**S.V.University, Tirupati, A.P, 2011, June, 22**

**(“Spectroscopic Investigations  
On Rare Earth Doped Glasses”)**

## **TEACHING EXPERIENCE**

**13 Years**

## **RESEARCH ACTIVITY**

**1. 11 Years of Research Experience in Lanthanide  
Spectroscopy**

**2. Reviewer in Two International Journals**

**(A). Journal of Alloys and Compounds, (B) Journal of Molecular Structure**

## **RESEARCH PUBLICATIONS**

**17 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)**

**ATTENDED NATIONAL/  
INTERNATIONAL/**

**SEMINARS/WORKSHOPS/ CONFERENCES**

**31(10- International – 21 National)**

## **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. Bi<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub>-CaF<sub>2</sub>-EuF<sub>3</sub> glass-ceramics for lighting applications  
B. C. Jamalaiah; N. Madhu, Shaik Annar, **K. Venkata Rao**, K. Pavani  
Journal of Materials Science: Materials in Electronics, Springer (2023)
2. Spectroscopic and luminescent properties of Ce<sup>3+</sup> doped TeO<sub>2</sub>-WO<sub>3</sub>-GeO<sub>2</sub> glasses  
G. Pullaiah, **K. Venkata Rao**, B.C. Jamalaiah, N. Madhu, N. Venkatramaiah  
Journal of Material Science & Engineering B 284 (2022) 115879
3. 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
4. Comparative impact of Nd<sup>3+</sup> 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
5. 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
6. visible properties of Sm<sup>3+</sup> ions in chloro-fluro-borate glasses for reddish-orange emission  
**K. Venkata Rao\***, S. Babu, B. Venkata Rao and Y.C. Ratnakaram  
(American Institute of Physics), AIP Conf.Pro.1731, 07003-1-07003-3 (2016), doi:  
10.1063/1.4947835.
7. 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).

8. Optical spectroscopy of Dy<sup>3+</sup> 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.

9. A Photoluminescence Study of Nd<sup>3+</sup> Doped Different Chloro-phosphate

Glasses for Solid State Laser Applications

**K.Venkata Rao<sup>a\*</sup>**, Y.C. Ratnakaram<sup>b</sup>

International journal of Nanotechnology and application (**IJNA**)

Vol.4, 2278-9391 (2014).

10. "Laser analysis of Ho<sup>3+</sup> doped different chloro-phosphate glasses"

International journal of Nanotechnology and application (**IJNA**)

Vol.4, 2278-4777 (2014).

**K. Venkata Rao**, S. Babu and Y.C.Ratnakaram

11. Emission properties of Eu<sup>3+</sup> doped different chlorophosphate glasses" (American Institute of Physics), AIP Conf.Pro.1349, 531-532 (2011), doi: 10.1063/1.3605967.

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

12. "Optical and luminescence studies of Pr<sup>3+</sup> and Er<sup>3+</sup> doped different Phosphate glasses". Physica B 405 (2010) 2297-2304.

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

13. "Spectroscopic investigations and luminescence spectra of Nd<sup>3+</sup> and Dy<sup>3+</sup> doped different phosphate glasses". Journal of Luminescence". 130 (2010) 536-543.

M.Seshadri, **K.VenkataRao**, J.LakshmanaRao, K.S.R. Koteswara Rao and Y.C.

Ratnakaram

14. "Investigations of spectroscopic properties (absorption and emission) of HO<sup>3+</sup> doped alkali, mixed alkali and calcium phosphate glasses". Optical Materials 32 (2010) 535-542.

M. Seshadri, Y.C. Ratnakaram, D. Thirupati Naidu and **K. Venkata Rao**

15. "Spectroscopic properties and Judd-Ofelt analysis of  $\text{Sm}^{3+}$  and  $\text{Dy}^{3+}$  doped chlorophosphate glasses". IOP Conf. Series: Materials Science and Engineering 2 (2009) 012045.

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

16. "Optical spectra and Judd-Ofelt analysis of  $\text{Pr}^{3+}$  and  $\text{Er}^{3+}$  in different phosphate glasses". IOP Conf. Series: Material Science and Engineering 2 (2009) 012032.

M.Seshadri,**K.VenkataRao**,G.N.HemanthaKumarand Y.C. Ratnakaram

17. "Spectroscopic and laser properties of  $\text{Sm}^{3+}$  doped different phosphate glasses". Journal of Alloys and Compounds 476 (2009) 263-270.

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

## **LIST OF PAPERS PRESENTED IN INTERNATIONAL & NATIONAL CONFERENCES**

1. Optical properties of Nd<sup>3+</sup> 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] 7<sup>th</sup> January, 2016 which was held at Dept.of.Physics, DSGDC for Women, Ongole, A.P

2. Visible Properties of Sm<sup>3+</sup> Ions In Chloro-Fluoro-Borate Glasses for Reddish-Orange Emission

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

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

3. Photoluminescence properties of Eu<sup>3+</sup> doped lead fluoroborate glasses

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

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

4. Structural and Optical properties of Pr<sup>3+</sup> doped lead fluoro Borate glasses

**K. Venkata Rao\***, S. Babu, C. Venkteswarulu 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 hybrad 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 19<sup>th</sup> , 2015.

6. Luminescence properties of Er<sup>3+</sup> 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 5<sup>th</sup>, 2015

7. “Spectroscopic properties and Judd-Ofelt analysis of Sm<sup>3+</sup> 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<sup>3+</sup> and Er<sup>3+</sup> 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<sup>3+</sup> doped different chlorophosphate glasses”

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

“55<sup>th</sup> DAE Solid State Physics Symposium” (SSPS-2010) held at Manipal University, Manipal, Karnataka during December 26-30, 2010.

10. Spectroscopic properties of Tm<sup>3+</sup> 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<sup>3+</sup> 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<sup>3+</sup> 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  $\text{Sm}^{3+}$  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  $\text{Nd}^{3+}$  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  $\text{Ho}^{3+}$  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  $\text{Nd}^{3+}$  doped different chlorophosphate glasses

**K. Venkata Rao and Y.C. Ratnakaram**

“National conference on Emerging Nano Materials” (NCENM-2014) which held at Sri Krishnadevaraya University, Anantapuram during March 21-22, 2014.

17. Concentration effect of  $\text{Dy}^{3+}$  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  $\text{Ho}^{3+}$  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) Cuddlore-1, Tamilnadu, India during Feb- 21-22, 2013.

19. Characterization of  $\text{HO}^{3+}$  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  $\text{Dy}^{3+}$  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.

#### **LIST OF PARTICIPATED NATIONAL SEMINAR/WORKSHOPS**

21. **Three day national workshop** on “Human Values and Professional Ethics”, Loyola Degree College, Pulivendula, Kadapa, A.P. On 26<sup>th</sup> Jan 2016.

22. **One day workshop** on spectroscopy, department of chemistry, VSU, Nellore, A.P. On 8<sup>th</sup> 2014.

23. **National seminar** on sustainable development and biotechnology J.B.Degree college, Kavali on 24<sup>th</sup> , October, 2010.A.P.

24. **National seminar** on emerging materials and technologies (EMT-2010) On 9-10<sup>th</sup> Oct-2010, SSBN Degree & PG College, Anantapur-A.P.

25. **The Indian Science Congress Association (ISCA-2023)** at RTM Nagapur University, Maharashtra, 3-7, January, 2023.

