

## **PROFESSOR K. BYRAPPA**

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**&**

**Professor, University of Mysore**

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### **Home Address**

**“Vidwat” # 19, C- Block, 80 Feet Road, Vijayanagara 3<sup>rd</sup> Stage,  
Mysore 570 017, Karnataka, India**

**Tel: +91-821-2515346, Telefax: +91-821-2515346; Cell: 09845274072**

## Education

- **Bachelor of Science (B.Sc.)** : Yuvaraja's College, University of Mysore, 1973, **81% Distinction, Gold Medalist**
- **Master of Science (M.Sc.)** : University of Mysore, 1973 to 1975, **First Rank 82% Distinction, Gold Medalist**
- **Research Fellow**, University of Mysore, from August 1975 to November 1977.
- **Research Fellow**, Moscow State University, Moscow, from Dec. 1977 to Dec. 1981 (**Moscow State University was one of the top TEN Universities in the world during 1970s to early 1980s**)
- **Research Associate**, Moscow State University, Moscow, Russia, from 1978-1981
- **Ph.D.**, Moscow State University, Moscow, Russia (**in Materials Science**), 1981
- **Post-Doctoral Fellow**, Moscow State University, Moscow, Russia from 1981-82
- **Diploma in Russian Language**, Moscow State University, Russia from 1978 to 1980
- **Certificate in German Language**, Mysore University, India, 1976
- **Certificate in Japanese Language**, Shimin Center, Sendai, Japan, 2006-2007.
- **Passed the Junior Level Examination of the Board of Commerce Institutes**
- Working and spoken knowledge in **Spanish and Japanese Languages**. Very fluent in **Russian Language**).
- Excellent working knowledge in the use of various softwares and computer hardwares for Scientific Research Applications.

## Field of Specialization

- **Nanotechnology and Nanomaterials**, Materials Science, Bioceramics, Ceramic Coatings, Solid Electrolytes, Photonic Materials, Metal Oxides, Environmental Science and Engineering, Water Technology and Water Treatment, Carbon, Photo catalysts, Zeolites, Thermodynamic Modeling, **Crystallography, Crystal Growth, Experimental Mineralogy**.
- **Known worldwide in Hydrothermal, Solvothermal and Supercritical Fluid Technology**.
- Physics and Chemistry of Phosphates, Silicates, Vanadates, Tungstates, Zeolites, etc. Characterization of Natural and Synthetic Materials by Various Techniques like XRD, DTA/DSC/TGA, IR- Spectroscopy, Electron Microscopy – Scanning Electron Microscopy, Field Emission Microscopy, Impedance Spectroscopy, and Properties related to the surface chemistry of Materials, etc.
- Took up Special Courses in Electron Microscopy, X-ray Spectroscopy and Image Processing, during 2000 – 2001 (Two Full Term Semester Course) at Rutgers University, New Jersey, USA.

## Principal Investigator

- Several Research Projects sponsored by Department of Science and Technology, New Delhi; Dept. Atomic Energy; University Grant Commission; Council of Scientific Industrial Research; Defence Research Development Organization; and
- Major Industries like General Electric, USA; Johnson & Johnson Co. USA; M.R. Jain Gem Company, India, etc.
- **Successfully Completed a Major Joint Research Project of US \$ 1.2 Million as Co-Investigator on “Hydrothermal Carbon” with Prof. M. Yoshimura of Tokyo Institute of**

**Technology, Japan**, as Principal Investigator, funded by the Research Institute of Solvothermal Technology, Takamatsu, Japan. I have trained several colleagues and research students in Japan, under this program. The work involved studies on various forms of carbon like carbon nanotubes, fullerenes, diamond synthesis, and activated carbon. Also worked on International Co-operation Research Project with Tokyo Institute of Technology, Tokyo, Japan and Tokyo University of Science and Technology, Chiba, Japan. Currently operating Major Research Projects funded by the University Grants Commission, Dept. of Science and Technology, and Siemens, Germany.

### Recognition in The University of Mysore

- Present ***h-index*** of the University of Mysore is **62**.
- **My individual contribution** to the ***h-index*** of the University of Mysore is about **24%**.
- Out of TOP 62 papers contributing to the University's ***h-index***, **TOP papers are my publications with highest number of citations**.

### Administrative Experience University of Mysore

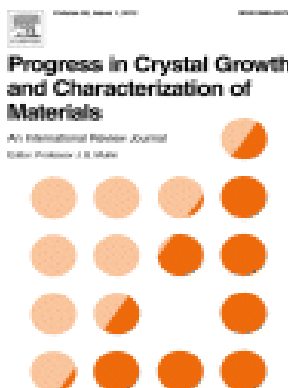
<b>Founder Coordinator</b>	M.Tech., in Materials Science, Center for Materials Science and Technology, University of Mysore
<b>Chief Coordinator</b>	University with Potential for Excellence <b>Rs.60 Crores</b> Inter-Departmental Program, University of Mysore
<b>Coordinator</b>	Center with Potential for Excellence in a Particular Area <b>Rs. 5 Crores</b> Project, University of Mysore
<b>Founder Director</b>	Internal Quality Assurance Cell (IQAC), University of Mysore <b>(Sept 2009 to Dec 2013)</b>
<b>Former Chairman</b>	Dept. of Earth Science, University of Mysore <b>(January 2009 to April 2011)</b>
<b>Former Director</b>	UGC-Academic Staff College, Univ. of Mysore <b>(January 2004 to September 2006)</b>

## CITATIONS

**TOTAL CITATIONS: 3800**

- Most Cited papers (as per the Publishers Notifications based on Science Direct):

## Top 25 Hottest Articles



**No. 1 Spot in the past 5 years**

**K. Byrappa** and T. Adschiri (2007) (**Impact Factor: 9.2**) (Review Article, Elsevier)  
Hydrothermal Technology for Nanotechnology  
*Progress in Crystal Growth and Characterization of Materials*, UK, Vol. 53, pp. 117-166.  
[Past 5 years] (> **290 citations**)

## MOST DOWNLOADED PAPERS

K. Namratha and **K. Byrappa** (2012) (**Impact Factor: 9.2**) (Review Article, Elsevier)  
Novel Solution Routes of Metal Oxide and Hybrid Metal Oxide Nanomaterials  
*Progress in Crystal Growth and Characterization of Materials*, UK, Vol. 58 [2], pp. 14-42.

## Most Cited Papers

1. **K. Byrappa**, S. Ohara and T. Adschiri (2008)  
Nanoparticles synthesis using supercritical fluid-towards biomedical applications (Review)  
*Advanced Drug Delivery Reviews*, Vol. 60, pp. 299-327, Netherlands.  
(**Impact Factor: 14.9**) (Over **189 citations**)
2. M. Yoshimura and **K. Byrappa** (2008)  
Hydrothermal Technology Past, Present and Future (Review)  
*J. Mater. Sci.*, Vol. 43(7), pp. 2085-2103, USA.  
(**Impact Factor: 2.2**) (Over **210 citations**)

3. W.L. Suchanek, **K. Byrappa**, P. Shuk, R.E. Riman, K.S. TenHuisen and V.F. Janas (2004)  
Preparation of magnesium-substituted hydroxyapatite powders by the mechanochemical-hydrothermal method  
*Biomaterials*, Vol. 25(19), pp. 4647-4657, USA.  
**(Impact Factor: 8.51) (Over 195 citations)**
4. W.L. Suchanek, P. Shuk, **K. Byrappa**, R.E. Riman, K.S. Ten Huisen and V.F. Janas (2002)  
Mechanochemical-hydrothermal synthesis of carbonated apatite powders at room temperature  
*Biomaterials*, Vol. 23, pp. 699-710, USA.  
**(Impact Factor: 8.51) (Over 270 citations)**

### Books Published

1. **'HYDROTHERMAL TECHNOLOGY FOR ADVANCED PROCESSING'**  
*Authors: K. Byrappa (India) and T. Adschiri (Japan)*  
*Under Preparation for publication from John Wiley & Sons, USA.*
2. **'HANDBOOK OF HYDROTHERMAL TECHNOLOGY'** (Second Edition)  
A Technology for Crystal Growth and Materials Processing  
*Authors: K. Byrappa (India) and M. Yoshimura (Japan) (780 Pages)*  
*Publishers: Elsevier, London, UK (2012)*
3. **'SPRINGER HANDBOOK OF CRYSTAL GROWTH'**  
*Eds. G. Dhanaraj (USA), K. Byrappa (India), V. Prasad (USA) & M. Dudley (USA)*  
*(1857 pages)*  
*Publishers: Springer-Verlag, Germany (2010)*  
*(This is the second biggest book ever published by Springer-Verlag, Germany)*
4. **'CRYSTAL GROWTH TECHNOLOGY'**  
*Eds. K. Byrappa (India) and T. Ohachi (Japan)*  
*Publishers: Springer-Verlag, Germany and William Andrew, New York, USA (2003)*
5. **'CRYSTAL GROWTH OF TECHNOLOGICALLY IMPORTANT ELECTRONIC MATERIALS'**  
*Eds. K. Byrappa (India), T. Ohachi (Japan), H. Klapper (Germany) and R. Fornari (Italy)*  
*Publishers: Allied Publishers Pvt. Ltd. New Delhi, India (2003)*
6. **'HANDBOOK OF HYDROTHERMAL TECHNOLOGY'** (First Edition)  
A Technology for Crystal Growth and Materials Processing  
*Authors: K. Byrappa (India) and M. Yoshimura (Japan) (870 Pages)*  
*Publishers: Noyes, USA (2001)*

7. **‘CURRENT TRENDS IN CRYSTAL GROWTH AND CHARACTERIZATION’**  
Editor: K. Byrappa  
*M.I.T. Publishers, (1991).*

8. **‘HYDROTHERMAL GROWTH OF CRYSTALS’**  
Editor: K. Byrappa (India)  
*Publishers: Elsevier Pergamon Press, Oxford, UK (1990)*

### Book on Fine Arts

**‘KUVEMPU PUNARMANANA’: Book on Fine Arts’**

Chief Editors: A. Malagatti and K. Byrappa

*Publishers: Mysore University Prasara, Mysore (2004)*

### Journals Special Editions

1. **CRYSTAL CHEMISTRY AND ITS SIGNIFICANCE ON THE GROWTH OF TECHNOLOGICAL MATERIALS** (*One Full Issue of the Journal*)  
Authors: K. Byrappa (India) and D.Yu. Pushcharovsky (Russia)  
*Publishers: Elsevier Pergamon Press, Oxford, UK (1992)*

2. **A NOVEL METHOD OF ADVANCED MATERIALS PROCESSING**  
Editors: K. Byrappa (India) and M. Yoshimura (Japan)  
*J. Materials Science, Springer, USA (Vol. 41(5), 2006)*

3. **A NOVEL ROUTES OF SOLUTION PROCESSING OF ADVANCED MATERIALS**  
Editors: K. Byrappa (India) and T. Adschiri (Japan)  
*J. Materials Science, Springer, USA (Vol. 43(2), 2008)*

4. **SPECIAL EDITION OF MATERIALS RESEARCH INNOVATIONS,**  
*Maney Publications, UK (Volume 13, No.1, 2010),*

5. **NOVEL ROUTES OF SOLUTION PROCESSING**  
Editor: K. Byrappa  
***Special Edition of Progress in Crystal Growth and Characterization of Materials (Vol. 58, 2011)***

### Professional Experience

#### Adjudicator

Ph.D. Degree Adjudication in different Universities in subjects - Physics, Chemistry, Materials Science and Earth Science

## Recognitions

- **Recognized as Ph.D., guide in Mysore University for Physics, Chemistry, Microbiology, Biotechnology, Materials Science, Earth Science, and Environmental Science.**
- **Recognized as Ph.D., guide in Mangalore University for Physics, Chemistry, Microbiology, Materials Science.**
- **39 Years of Research Experience in the field of Materials Science, Solid State Science, Crystal Growth, Chemistry of Materials, Crystallography, Crystal Chemistry, Experimental Mineralogy, Environmental Science.**
- **32 Years of Teaching Experience - Teaching Post-Graduate Students of M.Tech. Materials Science; M.Sc., Earth Science; M.Sc., Applied Geology; and M.Sc., Environmental Science.**
- **Twenty Students** have successfully completed their **Ph.D. Degrees** under my Supervision. Currently *SEVEN Ph.D. Students* are working under my Supervision in the fields related to Materials Science and Biotechnology.
- **Established a Fine Hydrothermal and Crystal Growth Laboratory in the Department of Earth Science, University of Mysore, India. Many Distinguished Scientists from UK, Holland, Russia, Spain, USA, Japan, etc., have visited and worked in my laboratory.**
- Participated in several International and National Conferences, Seminars, Workshops and Schools, both within and outside India.
- **Presented papers, Chaired Sessions and also Delivered Invited and Special Lectures in the International and National Conferences held in different Countries.**
- **Member of the Organizing Committee, Program Committee, Advisory Committee of Several National and International Conferences/ Congresses.**
- **Visiting Professor Abroad:** Japan, USA, UK, Spain, Germany, Russia, China, Holland, etc.
- **Visiting Faculty,** Pondicherry University; Bharathidasan University; Bharathiar University; Bangalore University; Madurai Kamaraj University; Kerala Univ. etc.

## Convenor

- **38<sup>th</sup> National Seminar on Crystallography, 11-13, Feb. 2009.**
- **4 Nos. of Orientation Programs for Post Graduate and Under Graduate Teaching Staff, on recent developments in Teaching Higher Education, during 2004-2006**
- **3 Nos. of UGC Sponsored Workshop for College Principals, on Higher Education System in India, during 2004 to 2006.**



- **Stress Management Workshop for Teaching Staff, July 2005.**
- **Soft Skill Development Workshop for Research Students of Mysore Univ. June 2005.**
- **DST – Workshop, January 27 - 30, 2005, Mysore.**
- **6<sup>th</sup> International Conference on Solvothermal Reactions (ICSTR-6), Mysore, India, August 24-28, 2004**
- **Indo-Japan Workshop on Solvothermal Reactions, August 23, 2004, Mysore, India**
- **International School on Crystal Growth of Technologically Important Electronic Materials (ISCGTIEM), January 20-28, 2003, Mysore, India. Sponsored by International Union of Crystallography, UK.**
- **Refresher Course in Crystallography and Mineralogy,” for Teachers from Post-Graduate and Under-Graduate Institutions in India, March 7-31, 1994, Mysore, India.**
- **International Seminar on Crystal Growth, August 14-16, 1989, Mysore, India.**

### Chair, Symposia in International Conferences

1. **Chair, Symposium on** Joint IUMRS-ICMAT 2015, **Suntec city, Singapore, June 18-23, 2017.**
2. **Chair, Symposium on** Joint IUMRS-ICMAT 2015 & IMURS-ICA 2015, **Suntec city, Singapore** Jun. 28 to Jul. 03, 2015.
3. **Chair, Symposium on** Nanomaterials Synthesis : Solution Routes, IUMRS-ICA 2013, Dec. 16 to 20, 2013, **Bangalore, India**
4. **Chair, Symposium on** Industrial Crystallization, 17<sup>th</sup> International Conference on Crystal Growth (ICCG-17), Aug. 11 to 17, 2013, **Warsaw, Poland.**
5. **Chair, Symposium on** Novel Solution Processing of Materials for Nanotechnology / Biomaterials International Conference on Materials for Advanced Technology (ICMAT-2013), 29 Jun to 5 Jul 2013, **Singapore.**
6. **Secretary, 3<sup>rd</sup> International Hydrothermal and Solvothermal Association Conference (ISHA-2013),** Jan 13 to 17, 2013, **Austin, USA.**
7. **Chair, Symposium on** Nanotechnology for Bio/Medical Materials IUMRS-ICA-2011, 12<sup>th</sup> International Conference in Asia, Sept. 19 to 22, 2011, **Taipei, Taiwan.**
8. **Chair, Symposium on** the Growth of Scintillating, Ferroelectric, Piezoelectric and Multi-Functional Crystals, 16<sup>th</sup> International Conference on Crystal Growth, Aug. 08 to 12, 2011, **Beijing, China.**
9. **Secretary, 2<sup>nd</sup> International Conference of the International Solvothermal and Hydrothermal Association,** Jul. 26 to 28, 2011, **Beijing, China.**
10. **Chair, Symposium on** Novel Routes of Solution Processing, Jun. 28 to Jul. 03, 2009, **Singapore.**



11. [Chair, Micro symposium on Hydrothermal Growth of Crystals](#), 21<sup>st</sup> Congress and General Assembly of International Union of Crystallography, Aug. 21 to 31, 2008, **Osaka, Japan**.
12. [Chair, Symposium on Materials Synthesis, Novel Approaches](#), In: IUMRS-2007, **Bangalore, India**.
13. [Chair, Symposium on Protein Crystallization](#), In: Asian Crystallography Conference, Nov. 2006, **Tsukuba, Japan**.
14. [Scientific Program Committee Member](#), **IUCR** – XX and General Assembly, Aug. 2005, **Florence, Italy**.

## Publications

- **10 Books and** Over **274 Research Papers** including **31 Major Reviews and Book Chapters** in leading International Journals.
- Presented over **148** papers in National and over **115** in International Conferences/Seminars held in India and abroad respectively. [Frequently delivered invited lectures in several international conferences held in various countries.](#)

## Distinctions and Fellowships

1. **Vijayavani National Education Leadership Award 2015.**
2. Elected **FELLOW/ACADEMICIAN**, World Academy of Ceramics, Italy/USA from 2009 onwards.
3. **SENIOR ASSOCIATE EDITOR**, Journal: Progress In Crystal Growth and Characterization Of Materials– a Review Journal from Elsevier Science Publishers, The Netherlands (**Impact Factor : 9.25**)
4. **CO-EDITOR IN CHIEF**, Journal: Materials Research Innovation, Publishers: Maney Publications, U.K. (**Impact Factor : 1.8**)
5. **EDITORIAL BOARD MEMBER**, Journal: Ceramics International, Elsevier Publications, Holland (**Impact Factor: 1.75**)
6. **EDITORIAL BOARD MEMBER**, Journal: The Open Access Crystallography Journal, Bentham Publications, USA.
7. **EDITORIAL BOARD MEMBER**, Journal of Minerals, Materials Characterization and Engineering, American Scientific Publishers, USA.
8. **GUEST EDITOR**, Journal of Materials Science, Springer, USA.
9. **MEMBER, EDITORIAL BOARD** Journal of The Indian Academy of Sciences
10. Expert, Dept. of Science and Technology, Govt. of India, National Program on Nano-materials for Ferro-Fluid Flow.
11. **DR. RAJA RAMANNA AWARD** for Science and Technology, 2011 (highest State Award for Science Education).
12. Recipient of **SIR C V RAMAN AWARD** in Physical Sciences, for the year 1998, India.
13. **GOLD MEDALIST** in Master of Science Degree, Mysore University, 1975.
14. **GOLD MEDALIST** in Bachelor of Science Degree, Mysore University, 1973.
15. **1<sup>st</sup> RANK (1<sup>st</sup> Place)** in Master of Science Degree Examination, University of Mysore, 1975
16. Recipient of **SUBJECT SCHOLARSHIP** from 1973 to 1975.
17. **Medal, Materials Research Society of India**, 2004

18. **Indian Association of Crystal Growth Award 2014**, India
19. **Consultant to the International Commission on Crystal Growth**, a Body of the International Union of Crystallography, from 1999-2002.
20. **Member, INSA National Committee on Crystallography**, from 2006 -
21. **Founder General Secretary**, International Solvothermal and Hydrothermal Association (ISHA), from 2006 -
22. Recipient of the Mysore University **GOLDEN JUBILEE AWARD** for 1987 and 1992 for the **BEST RESEARCH WORK** in the University of Mysore.
23. Served as UGC Expert for SAP Programs, and Member of NAAC Committee.
24. Recipient of the **ATTRACTIVE PAPER AWARD** in the IX International Conference on Crystal Growth, August 20-25, 1989, Sendai, Japan.
25. MEMBER, Scientific Program Committee, International Congress on Crystallography, Florence, Italy, August 2005.
26. Selected to **Elite Club of 2000 Outstanding Personalities of 20th Century**, in Science & Technology by International Biographic Centre, Cambridge, U.K.
27. MEMBER, British Association for Crystal Growth, UK.
28. **EXECUTIVE COMMITTEE MEMBER**, National Committee for Crystal Growth, India.
29. MEMBER, International Panel on the Experimental Techniques of the Growth of *4f* Elements Compounds, Lisbon, Portugal, 1987.
30. MEMBER, NEW YORK ACADEMY OF SCIENCES, USA.
31. MEMBER, International Advisory Board on Crystal Growth.
32. **Referee** for Journal of Crystal Growth, Elsevier / North-Holland Publishers,; Solid State Ionics, Elsevier Science Publishers; Chemistry of Materials; Journal of Materials Science, Kluwer Publications, Journal of Materials Research, Crystal Growth and Design, American Chemical Society Publications, USA. Materials Science and Engineering, etc.
33. Listed in **Marques Who's Who in the World**, USA; **Marques Who's Who in Asia**; **Marques Who's Who** in Science and Engineering, from 1997 onwards
34. Delivered **SPECIAL LECTURES** in National & International Schools and Seminars on Materials Science, Crystal Growth held in different countries in the world.
35. Published over **263 Research Papers** including **30 major** reviews in International Journals, Book chapters for overseas publishers and presented over 185 papers in National and International Conferences and Seminars.
36. Invited to several International Conferences and Seminars related to Crystal Growth and Hydrothermal Research, Presented Invited Papers and Chaired Sessions.
37. UGC expert for Committee on Orientation Programmes and Refresher courses in India, 2006
38. **Executive Council Member**, *National Crystallography*, Council of Indian National Science Academy, India. From 2007 -
39. Executive Council Member, International Commission on Crystal Growth and Characterization of Materials, International Union of Crystallography, UK. From 2002-
40. Executive Council Member, Asian Crystallography Association, From 2006 –
41. Member, Core Committee for Ph.D. Regulations of University of Mysore, Mysore

42. Member, Core Committee for VISION 2025, UNIVERSITY OF MYSORE.
43. Member, Core Committee for Choice Based Credit System, University of Mysore
44. **Nodal Officer**, University Auditing Committee, University of Mysore
45. **Chairman, Member**, NAAC Peer Team Committees.
46. **Fellow** of the *Mineralogical Society* of India
47. **Fellow** of the *Geological Society* of India.
48. **Fellow** of the *Geochemical Society* of India.

### Visiting Professor/ Faculty Scientist

- Delivered Special Lectures and Course Lectures in various countries like **Spain, Japan, USA, Russia, UK, Germany, Holland, Poland, Italy, Korea, etc.** for Masters Course and Ph.D. course students, in the subject related to Hydrothermal, Solvothermal and Supercritical Processing of Materials.
- Frequent visit to Europe, North America, China, Korea, Russia, Malaysia, Thailand, Australia, Singapore and Japan. Also worked in several International Laboratories on both short term and long term basis. **Organizing Chair of several Symposia of Major International Conferences held abroad.**
- Frequently traveled in the whole of Europe, North America, Japan, South Korea, Russia, China, Singapore, Hong Kong, Malaysia, Thailand and Australia in various capacities like Research Fellow, Post-Doctoral Fellow, visiting scientist, visiting professor and Indian National Science Academy Delegate.
- Visited frequently several Universities & Institutes in the world to deliver lectures. Given below are some selected Universities and Institutes visited by **Prof. K. Byrappa**, around the world.
  - Seoul National University, Seoul, South Korea, *Dec .2007, Feb. 2014.*
  - Mohidol University, Thailand, *Oct. 2003, Jul. 2013.*
  - Tohoku University, Sendai, Japan, *Sept. 1989, Nov. 2005, Aug. 2006, Oct. 2006 to Sept. 2007, Oct.2008.*
  - Tokyo Institute of Technology, Japan, *Dec. 1996, Sept. 1997 to Jan. 1998, April 1999, Dec. 1999, Jul. 2000, Jan. 2001, Oct. 2003, Dec.2005, Jan., May, July, Aug., Sept. 2007, April 2008.*
  - Tokyo University of Science & Technology, Japan *Oct. 2003, Dec. 2005, Aug. 2006, July & Sept. 2007.*
  - Multimedia University, Kuala Lumpur, Malaysia, *Dec. 2005* and so on...
  - Tokyo Metropolitan Institute of Technology, Japan, *Oct. 2003, Dec. 2005*
  - University of Florence, Italy, *Aug. 2005.*
  - National University of Singapore, Singapore, *July 2005.*
  - Ettore Majorana International Center for Crystallography, Erice, Sicily, Italy, *Apr.1980, Jun. 2004.*
  - Tsinghua University, Beijing, China, *Dec. 2003.*
  - Beijing Polytechnic University, China, *Dec. 2003.*

- Jilin University, Changchun, China, *Dec. 2003.*
- Institute of Mechanics, Chinese Academy of Science, Beijing, China, *Dec. 2003.*
- Rutgers University, New Jersey, USA, *Sept. 1999 to Aug. 2001.*
- New York University, at Stony Brook, USA, *May 2001.*
- International Center for Theoretical Physics, Trieste, Italy, *Mar. 2001.*
- Tokyo University, Japan, *Jan. 2001.*
- Kochi University, Kochi, Japan, *Jul. 2000.*
- Doshisha University, Kyoto, Japan, *Oct. 1997.*
- Korea Advanced Institute of Science and Technology, Taejon, South Korea, *Dec. 1996.*
- University of Terragona, Terragona, Spain, *Jul. 1990, Dec. 1994.*
- Autonomous University of Barcelona, Bella Terra, Spain, *Oct. to Dec. 1994.*
- Moscow State University, Moscow, Russia, *1977 to 1982, Jul to Sept.1991, Sept to Oct. 1994.*
- University of Barcelona, Barcelona, Spain, *May to Jul 1987, Jul to Aug.1990, Oct to Dec. 1994.*
- Jegolian University, Krakow, Poland, *Sept. 1994.*
- Yamanashi University, Kofu, Japan, *Sept. 1989.*
- Institute of Crystallography, Moscow, Russia, *1978 to 1982.*
- Institute of General and Inorganic Chemistry, Moscow, Russia, *1978 to 1982.*
- Lebedev Institute of Physics, Moscow, Russia, *1978 to 1982.*
- Institute of Rare Earth Materials, Moscow, Russia, *1980 to 1981.*
- DSM, Geleen, Holland, *Jun to Jul 1986.*
- ETH, Lausanne, Switzerland, *Jul 1986.*
- Torino University, Torino, Italy, *Jun 1986.*

### Membership

- **Chairman**, Board of Studies in Earth Science, from 2013.
- **Chairman**, Board of Studies in Materials Science, University of Mysore, from 2011.
- Expert Member of the Dept. of Science and Technology, Govt. of India, on the National Program on Ferro-Fluid Technology.
- UGC Expert Committee Member on Special Assistance Programmes from 2005 to date.
- UGC Expert Committee Member on Programs for Academic Staff Colleges, 2004-2006.
- Expert Member of the Vision University of Mysore 2025.
- Academic Council, University of Mysore, India, from July 1998 to November 2001

### List of Publications

1. P.Shubha, K.Namratha, and **K.Byrappa**  
Use of Emblica officinalis aqueous extract in the inhibition of Candida albicans and its effect over the physical properties of acrylic resins  
**The Journal of Prosthetic Dentistry** (2015) (Communicated)
2. P.Shubha, K.Namratha, and **K.Byrappa**  
Graphene Oxide -A promising material for creating surface disinfection against nosocomial pathogens"  
**American Journal of Infection Control** (2015) (Communicated)
3. R. Madhu Kumar, B. Lkshmeesha Rao, S. Asha, B. Narayana, **K. Byrappa**, Youjiang Wang, Donggang Yao and Y. Sangappa  
Gamma radiation assisted biosynthesis of silver nanoparticles and their characterization  
**Adv. Mater. Lett.** 6(12) (2015) 1088-1093
4. P.S.Manjula, B.K.Sarojini, B.Narayan, **K.Byrappa** and S.Madhan Kumar  
Crystal structure of (E) -5- (4-hydroxybenzyl)-4- {[4-methylsulfonyl)benzyl-idene]amino }-2,4-dihydro-3H-1,2,4-triazole-3-thione  
**Acta Cryst.** (2015). E71, o982-o983
5. P.S.Manjula, B.K.Sarojini, B.Narayan, **K.Byrappa** and S.Madhan Kumar  
Crystal structure of 4-[(E) - (4-fluorobenzylidene) amino]-3-methyl-1 H-1,2,4-triazole-5 (4H) - thione **Acta Cryst.** (2015). E71, o912-o913
6. Prakash S. Nayak, Badiadka Narayana, Jennifer Fernandes, Balladka K. Sarojini, Sana Sheik, Kenkere S. Shashidhara, Konambi R. Chandrashekhar and **Kullaiah Byrappa**  
Synthesis & Characterization of 2-(substituted-phenyl)acetohydrazide Analogs, 1,3,4-oxadiazoles, and 1,2,4-triazine Ring Systems: A Novel Class of Potential Analgesic and Anti-Inflammatory Agents, **Letters in Drug Design & Discovery (In Print)**
7. S.N. Sheshadri, P.Nagedra, B.P. Siddaraju, K.H. Hemakumar, **K.Byrappa**, N.K.Lokanath and S.Madhan Kumar  
Crystal structure of {[2-hydroxy-2-(3-methoxyphenyl) cyclo-hexyl] methyl} dimethyl-ammonium benzoate, **Acta Cryst.** (2015). E71, o864-o865
8. Shayan M. Byrappa, C.S.Vicas, D.Neel, K.Namratha, S.D.Keerthana, D.Ravi, and **K.Byrappa (Impact factor 1.6)**  
Hydrothermal growth of fine Magnetite and ferrite crystals,  
**J.Crystal Growth.** <http://dx.doi.org/10.1016/j.jcrysgr.2015.10.027>
- 9.K.Jagadish, S. Srikantaswamy, **K. Byrappa**, L.Shruthi, , M.R. Abhilash **(Impact factor 1.6)**  
Dispersion of multiwall carbon nanotubes in organic solvents through hydrothermal supercritical condition, **Journal of Nanomaterials**, (2015) doi.org/10.1155/2015/381275
10. L. Kashinath, K. Namratha and **K. Byrappa, (Impact factor 2.7)**

Microwave assisted facile hydrothermal synthesis and characterization of zinc oxide flower grown on graphene oxide sheets for enhanced photodegradation of dyes, *Applied Surface Science*, doi.10.1016/j.apsusc/2015.09.072

11. C.S.Vicas, K.Namratha, **K.Byrappa**, H.S.Yathirajan  
Preclinical assessment of Zinc ferrite nanoparticles synthesized using D- Glucose by hydrothermal method  
**Journal of Chemical, Biological, and Physical sciences**, 11/2015; 6(1). DOI:10.6084/m9.figshare.1608941
12. M.Junaid Bushiri, **K.Byrappa**, V.U.Nayar,  
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### KEYNOTE

**PRESENTED 76 PLENARY, KEYNOTE AND INVITED PAPERS AND 49  
CONTRIBUTED PAPERS IN INTERNATIONAL CONFERENCES HELD IN VARIOUS  
COUNTRIES AROUND THE WORLD.**

*Presented 141 keynote / invited / contributed papers in the national conferences.*

### Papers presentation and participation in the international conferences/ workshops/schools held abroad

1. **K.Byrappa** and K. Namratha (2015) (**Invited Talk**)  
Hydrothermal processing, characterization and applications of functional oxides materials  
ICMAT 2015&IUMRS –ICA 2015, Singapore, June-28<sup>th</sup>-July 3<sup>rd</sup>, 2015
2. K.Namratha and **K. Byrappa** (2015) (**Oral Prsentation**)  
Hydrothermal fabrication of Iron oxides using Piper nigrum extract,  
ICMAT 2015&IUMRS –ICA 2015, Singapore, June-28<sup>th</sup>-July 3<sup>rd</sup>, 2015
3. K.Namaratha, L. Kashinath and **K. Byrappa** (2015) (Poster presentation)  
Hydrothermal synthesis of hybrid Zinc sulphide- Graphene oxide nanocomposite for  
enhanced photocatlytic performance,  
ICMAT 2015&IUMRS –ICA 2015, Singapore, June-28<sup>th</sup>-July 3<sup>rd</sup>, 2015

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Investigation on the microstructural and conducting properties of nickel chloride doped HPMC polymer composites  
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Effect of microwave irradiation on the microstructural properties of bivoltine silk fibroin films, ICMAT 2015&IUMRS –ICA 2015, Singapore, June-28<sup>th</sup>-July 3<sup>rd</sup>, 2015
6. **K. Byrappa** and K. Namratha (2014) (**Plenary Talk**)  
Hydrothermal Process Parameters vs Properties Tuning Nanoparticles  
ISHA 2014 Conference; France, Oct. 28, 2014.
7. K. Namratha and **K. Byrappa** (2014) (**Oral Presentation**)  
One Step Hydrothermal Fabrication of In Situ Surface Modified Metal Oxides Nanoparticles for Biomedical Applications”  
ISHA 2014 Conference France, Oct. 27, 2014.
8. **K. Byrappa** and K. Namratha (2014) (**Plenary Talk**)  
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9. **K. Byrappa** and K. Namratha (2014) (**Keynote Talk**)  
Solution Processing of In situ Surface Modified Metal Oxides Nanoparticles for Biomedical Applications “2014  
CINBM International Workshop; Eco-friendly and Bio-compatible Nano-Materials”, Seoul, Korea, Feb. 14, 2014.
10. **K. Byrappa** and K. Namratha (2013) (**Keynote Talk**)  
Solution Processing of Organic Modified Metal Oxide Nanoparticles for Biological Applications, “Nano-Technology/-Materials for Energy, Electronics and Others”, National Cheng Kung University,  
5<sup>th</sup> PCGMR/NCKU Symposium on Tainan, Taiwan, Dec. 11-13, 2013.
11. **K. Byrappa** and K. Namratha, (2013) (**Invited Talk**)  
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12. **K. Byrappa** and K. Namratha, (2013) (**Invited Talk**)  
Organic Assisted Novel Solution Processing of Photocatalytic Metal Oxide Nanomaterials  
International Conference on Materials for Advanced Technology (ICMAT-2013) Singapore, Jun 30-Jul 05, 2013.

13. **K. Byrappa** and K. Namratha (2013) (**Keynote Talk**)  
Supercritical Hydrothermal Solution Processing of Some High Melting Nanomaterials,  
3<sup>rd</sup> Ibero-American Conference on Supercritical Fluids, Cartagena, Colombia, Apr. 01-05,  
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14. **K. Byrappa**, (2012) (**Invited Lecture**)  
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USA.
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19. K. Namratha, **K. Byrappa**, M. Yoshimura, G.K.L. Goh, T. Adschiri, (**Oral Presentation**)  
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In situ Surface Modification of ZnO Nanomaterials under Novel Hydrothermal Solution  
Routes, Promotion Center for Global Materials Research Symposium on Nanotechnology for  
Advanced Materials, Tainan, Taiwan, Sept. 23-24, 2011
21. S. Srikantaswamy, D. Shivakumar, **K. Byrappa**, B.M. Kiran and M. Yoshimura, (**Oral  
Presentation**)

Photocatalytic Degradation of Phenol using Hydrothermally Prepared ZnO Impregnated onto Activated Carbon, Promotion Center for Global Materials Research Symposium on Nanotechnology for Advanced Materials, Tainan, Taiwan, Sept 23-24, 2011

22. **K. Byrappa**  
Preparation, Characterization and Biological Activity of Selectively Doped ZnO Nanoparticles (**Invited Talk**)  
IUMRS-ICA 2011, 12<sup>th</sup> IUMRS International Conference in Asia, Taipei, Taiwan Sept.19-22, 2011
23. S. Srikantaswamy, K. Vivek, D. Shivakumar and **K. Byrappa**,  
Biodegradation of Dyes in Aqueous Solution using Fungi, IUMRS-ICA 2011,  
12<sup>th</sup> IUMRS International Conference in Asia, Taipei, Taiwan, Sept.19-22, 2011,
24. K Namratha, **K. Byrappa**, A. Jamuna Bai and V. Ravishankar Rai,  
Novel Solution Routes of Synthesis, Characterization and Antimicrobial Activity Study of Selectively Doped ZnO Designer Nanoparticles,  
IUMRS-ICA 2011, 12<sup>th</sup> IUMRS International Conference in Asia, Taipei, Taiwan, Sept.19-22, 2011.
25. **K. Byrappa** and K. Namratha, (**Invited Talk**)  
Hydrothermal Synthesis and Photocatalytic Studies of In situ Surface Modified Silver Doped ZnO Nanoparticles, IUMRS-ICA 2011,  
12<sup>th</sup> IUMRS International Conference in Asia, Taipei, Taiwan. Sept. 19-22, 2011
26. **K. Byrappa** and K. Namratha, (**Invited Talk**)  
Recent Progress in the Novel Hydrothermal Solution Processing of Advanced High Melting Nanomaterials  
10th International Symposium on Advanced Organics Photonics and 1<sup>st</sup> International Symposium on Super-hybrid Materials, Tokyo & Sendai, Japan. Sept 28-Oct. 02, 2010
27. **K. Byrappa**, (**Keynote Talk**)  
Novel Routes of Hydrothermal Solution Processing of Advanced Nanomaterials 2nd International Solvothermal and Hydrothermal Association Conference (ISHA-2010) Beijing, China, July 27-29, 2010.
28. **K. Byrappa**, (**Invited Talk**)  
Novel Hydrothermal Solution Routes of Advanced Nanomaterials and Nanoceramic Processing 12th International Ceramics Congress, Montecatini Terme, and Tuscani, Italy. June 06 – 11, 2010.
29. **K. Byrappa**, (**Invited Talk**)

Crystallization of Polyscale Materials through Hydrothermal Routes International School of Crystallization, Granada Spain, May 24-28, 2010,

30. K. Namratha, S. Suresha, M.B. Nayan and **K. Byrappa, (Oral Presentation)**  
Synthesis, Characterization and Photocatalytic Properties of Silver Doped ZnO,  
2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010)  
Beijing, China, July 27-29, 2010.
31. K. Soga, D. Ehrentraut, K. Namratha and **K. Byrappa, (Oral Presentation)**  
In situ sydrothermal Surface Modification and Photoluminescence Properties of ZnO  
Nanocrystals,  
2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010)  
Beijing, China, Jul. 27-29, 2010.
32. G. Chaitanya Lakshmi, S. Ananda, Netkal M. Made Gowda, B.R. Srilatha and **K. Byrappa, (Oral Presentation)**  
Synthesis of Iron-Pyridoxine Complex by Solvothermal process, its Structural  
Characterization and Anti-Oxidant Activity Evaluation,  
2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010),  
Beijing, China, Jul. 27-29, 2010.
33. K. Namratha and **K. Byrappa, (Oral Presentation)**  
Hydrothermal Synthesis, Surface Modification and Photocatalytic Properties of ZnO Designer  
Particulates, 2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference  
(ISHA-2010), Beijing, China, Jul. 27-29, 2010.
34. S. Ananda, G. Chaitanya Lakshmi, R. Somashekar, C. Ranganathaiah and **K. Byrappa, (Oral Presentation)**  
Semiconductor Assisted Photodegradation of Dyes, Pesticides and Industrial Effluent by  
ZnO:Ru and ZnO/RuO<sub>2</sub>/AgO Nanocomposites, Synthesized by Electrolytic Method,  
2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010)  
Beijing, China, Jul. 27-29, 2010.
35. M.B. Nayan, K. Namratha and **K. Byrappa, (Poster Presentation)**  
Hydrothermal Synthesis and Photocatalytic Properties of Pure and Doped ZnO Fine Crystals,  
2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010),  
Beijing, China, Jul. 27-29, 2010.
36. B. Shahmorady, K. Namratha, **K. Byrappa**, K. Soga, S. Ananda and R. Somashekar,  
Enhancement of Photocatalytic Activity of Modified Mn Doped ZnO Nanoparticles, 2<sup>nd</sup>  
International Solvothermal and Hydrothermal Association Conference (ISHA-2010), Beijing,  
China. Jul 27-29, 2010.

37. **K. Byrappa, (Invited Talk)**  
Decolouration of Indigo Carmine Dye by Oxidation Process Using Cobalt (II) and Chloramine-T, 2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010), Beijing, China, Jul. 27-29, 2010.
38. S. Ananda, B.R. Srilatha and **K. Byrappa**, (Poster presentation)  
Extraction of Biomaterial from the Medicinal Plant: A Study of Antidiabetic Activity, 2<sup>nd</sup> International Solvothermal and Hydrothermal Association Conference (ISHA-2010), Beijing, China, July 27-29, 2010.
39. Chandrashekar C.K. Basavalingu. B, T. Parvin, K.M. Lokanatha Rai, K. Soga and **K. Byrappa**  
Synthesis, characterization and photocatalytic property of rare earth vanadates, ISHA 2008, University of Nottingham, UK, Sept. 8-10, 2008.
40. Sajjan C.P. S. Ananda, G.V. NarasimhaRao, M.S. Vijayakumar and **K. Byrappa**  
Hydrothermal Synthesis of Cr Doped ZnO and its Application in the Photodegradation of Textile Waste,  
ISHA 2008, University of Nottingham, UK, Sept. 8-10, 2008.
41. Shivaraju H.P T. Rungnapa, S. Pakamard, M.S. Vijayakumar, G.V.Narasimha Rao, C.Ranganathaiah and **K. Byrappa**,  
Hydrothermal Coating and Properties of TiO<sub>2</sub> Fine Crystals on Calcium Silicate Beads, ISHA 2008, University of Nottingham, UK, Sept. 8-10, 2008.
42. Shahmoradi Behzad, C.P. Sajjan, T. Parvin and **K. Byrappa**,  
Hydrothermal Synthesis and Properties of Modified TiO<sub>2</sub> Nanoparticles,  
ISHA 2008, University of Nottingham, UK, Sep 8-10, 2008.
43. K. Soga, **K. Byrappa**,  
Hydrothermal growth and characterization of rare earth vanadate polyscale crystals,  
IUCr 2008, Osaka, Japan, Aug. 23-31, 2008.
44. **K. Byrappa, (Invited Talk)**  
Hydrothermal synthesis of doped ZnO and its application in photodegradation of toxic amaranth dye,  
IUCr 2008, Osaka, Japan, Aug. 23-31, 2008.
45. **K. Byrappa, (Keynote Talk)**,  
Hydrothermal Growth of Polyscale Rare Earth Vanadate Crystals 4th Asian Crystal Growth Technology Conference, Sendai, Japan, May 21-25, 2008.
46. **K. Byrappa, (Keynote Talk)**,



Novel Routes of Processing of Advanced Materials  
International Symposium on Soft Solution Processing, Tokyo, Japan Mar 7-8, 2008.

47. **K. Byrappa**,  
Hydrothermal Technology towards Green Processing of Advanced Materials, SUPER GREEN 2007, November 28 – December 01, 2007, Seoul, South Korea. Doyama Symposium,  
Tokyo, Japan, September 05-08, 2007.
48. **K. Byrappa**,  
Growth of Diamond Nano Crystals,  
International Conference on Crystal Growth (ICCG-15) Salt Lake City, USA, Aug 11-17, 2007.
49. Sridevi, **K. Byrappa** and T.Adschiri, Polyurethane TiO<sub>2</sub> composite and its photocatalytic properties, The 2nd International Conference on Advances in petrochemicals and polymers (ICAPP2007) Bangkok, Thailand, Jun. 25-28, 2007.
50. **K. Byrappa**, T. Adschiri, (**Invited Talk**),  
Novel (Solutions, Liquid or Fluid) Routes of Advanced Nanomaterial Processing STAC-JTMC, Shonan Village Center (Kanagawa), Japan, May 23-25, 2007.
51. **K. Byrappa**, C.K. Chandrashekar, K. Tanaka, S. Ohara and T. Adschiri, (**Invited Paper**)  
Subcritical to Supercritical hydrothermal synthesis of rare earth vanadate crystals  
1st International Symposium on Applications of Supercritical Fluids in Green Chemistry and Materials Science, Beijing, China, Mar. 1- 4, 2007.
52. **K. Byrappa**,  
Attended the Conference and Chaired Microsymposium in Joint Conference of Asian Crystallographic Association and Crystallographic Society of Japan, Epochal, Tsukuba, Japan, Nov 20-23, 2006.
53. **K. Byrappa**, B. Basavalingu, P. Madhusudan, A.S. Dayananda, T. Adschiri and M.Yoshimura, Synthesis and characterization of nanoforms of carbon and yttrium aluminium perovskites (YAP) under supercritical conditions,  
8<sup>th</sup> International Symposium on Supercritical Fluids, Kyoto, Japan, Nov. 5-8, 2006.
54. J.T. Joseph, S.L. Gaonkar, K.M.L. Rai, **K. Byrappa**,  
Microwave assisted synthesis of thio esters and thioamides using potassium thiocyanate as thionating agent  
Joint 8<sup>th</sup> International Symposium on Hydrothermal Reactions 7<sup>th</sup> International Conference on Solvothermal Reactions, Sendai, Japan, Aug. 2006.

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Synthesis of benhydrol derivatives by metal imidozalen catalyzed electrophilic addition of aromatic aldehydes to hydrocarbon under solvothermal condition  
Joint 8<sup>th</sup> International Symposium on Hydrothermal Reactions & 7<sup>th</sup> International Conference on Solvothermal Reactions, Sendai, Japan, Aug. 2006.
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Mild hydrothermal synthesis and characterization of silver sulphide  
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57. A.S. Dayananda, B. Basavalingu, K. Soga, **K. Byrappa**, M. Yoshimura, C.P. Sajan,  
Hydrothermal and Solvothermal Routes for the Synthesis of Carbon Composites by caging Zinc Oxide and Titanium Oxide in the NaNO Forms of Carbon,  
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58. S. Srikant Swamy, **K. Byrappa**, M. Yoshimura,  
Hydrothermal preparation of photocatalytic material ZnO impregnated Activated Carbon using hyacinth for the degradation of toxic organic compounds in industrial,  
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Synthesis and Characterization of Rare Earth Phosphate Bio-Imaging Phosphors,  
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60. **K. Byrappa**, C.K. Chandrashekar, B. Basavalingu, K.M. Lokanatha Rai, K. Soga,  
Investigation of Yttrium Vanadate System under Hydrothermal and Solvothermal Conditions,  
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61. P. Madhusudan, B. Basavalingu, **K. Byrappa**, A.S. Dayananda, K. Soga, M. Yoshimura  
Formation of Filamentous Carbon through Dissociation of Chromium Carbide under Hydrothermal Conditions,  
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62. B.V. Suresh Kumar, **K. Byrappa**, C. Ranganathaiah, K. Soga, C.P. Sajan,  
Aluminophosphate zeolites encapsulating clusters of TiO<sub>2</sub> and ZnO under hydrothermal conditions,

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66. **K. Byrappa**, C.P. Sajan, A.K. Subramani, K.M.L. Rai, S. Ananda, M. Yoshimura,  
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69. A.K. Subramani, **K. Byrappa**, R. Dinesh, K.M.L. Rai, S. Ananda, M. Yoshimura,  
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71. **K. Byrappa**, A.K.Subramani, K.M. Lokanatha Rai, R. Dinesh and M.Yoshimura, Hydrothermal Preparation of Various Photocatalytic Materials and its Applications ICMAT 2005 AND ICAM 2005, Singapore, Jul 3-8 2005.
72. M. Yoshimura, Y. Gogotsi, **K. Byrappa**, W. Suchanek, H. Wang, T. Fujino, N. Kumagai, S. Swamy, B. Basavalingu, J. Libera, D. Rangappa, J. Calderon-Moreno and T. Watanabe Hydrothermal Carbon: Synthesis and Reaction of Various Carbon Materials under Hydrothermal Conditions 7<sup>th</sup> International Symposium on Hydrothermal Reactions, Changchun, China, Dec. 14-18, 2003.
73. **K. Byrappa**, A.K. Subramani, S. Ananda, K.M.L. Rai, B. Basavalingu and S. Srikantaswamy Photocatalytic Degradation of Indigo Carmine Dye Using TiO<sub>2</sub> Supported Activated Carbon and Commercial TiO<sub>2</sub> 7<sup>th</sup> International Symposium on Hydrothermal Reactions, Changchun, China, Dec. 14-18, 2003.
74. **K. Byrappa**, B. Nirmala, Ramaningaiah, K.M. Lokanatha Rai and M. Yoshimura Hydrothermal Growth of Nd: YVO<sub>4</sub> Crystals 7<sup>th</sup> International Symposium on Hydrothermal Reactions, Changchun, China, Dec. 14-18, 2003.
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76. **K. Byrappa**, A.K. Subramani, K.M.L. Rai, S. Ananda, B. Basavalingu and S. Srikantaswamy Solar Light Induced Photodegradation of Pharmaceutical Effluent Using Hydrothermally Impregnated Activated Carbon, 7<sup>th</sup> International Symposium on Hydrothermal Reactions, Changchun, China, Dec. 14-18, 2003.
77. **K. Byrappa**, M.S. Vijaya Kumar, S. Ananda, K.M.L. Rai, B.V. Suresh Kumar Hydrothermal Synthesis, Kinetic Study and Characterization of Some Selected Aluminophosphate Zeolites 7<sup>th</sup> International Symposium on Hydrothermal Reactions, Changchun, China, Dec. 14-18, 2003
78. **K. Byrappa**, R. Dinesh, K.M. Lokanatha Rai and M. Yoshimura Photocatalytic Degradation of Nitroarenes using Activated Carbon / TiO<sub>2</sub> Photocatalyst

- IUMRS-ICAM 2003, Yokohama, Japan, Oct. 8-13, 2003.
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81. **K. Byrappa**, C-W.Chen, C.Oakes, W.Suchanek, P.Shuk, Y.Liu, M.Senna and R. E. Riman  
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5<sup>th</sup> New Jersey Symposium on Biomaterials Science, Somerset, New Jersey, USA, Nov. 9 – 10, 2000.
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83. **K. Byrappa**, B.V.Suresh Kumar, and K.M. Lokanath Rai  
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84. **K. Byrappa**, B.Nirmala, K.M. Lokanath Rai and M. Yoshimura  
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85. **K. Byrappa**, R. Dinesh, K.M. Lokanath Rai, M. Yoshimura, and B. Basavalingu  
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87. R.E. Riman, W.L. Suchanek, **K. Byrappa**, C.W. Chen, C.S. Oakes, M. Senna  
Synthesis of Hydroxyapatite Designer Particulates, Hydrothermal Synthesis of hydroxyapatite Designer Particulates  
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Crystal Growth of Rare Earth Vanadate Laser Hosts and In-Situ Fabrication of their  
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113. **K. Byrappa**, I.I.Plyusnina and G.I.Dorokhova  
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XII International Congress of Crystallography, Ottawa, Canada, Aug. 16-25, 1981.
114. **K. Byrappa**  
Growth and Characterization of CsNdP<sub>4</sub>O<sub>12</sub>.  
VI International Conference on Crystal Growth, Moscow, Sept. 10-16, 1980.  
International UNESCO School on Advances in Crystallography and Materials Science  
Ettore Majorana International Centre for Crystallography, Erice, Italy, Apr. 14 – 24, 1980.
115. **K. Byrappa** and B.N. Litvin  
Investigations of Phases and Crystallization in the System Cs<sub>2</sub>O-Nd<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub>-H<sub>2</sub>O  
II European Conference on Crystal Growth, Lancaster, England, Sept. 10-15, 1979.

### **Papers Presentation/ Participation in National and International Conferences Held in India**

1. **K. Byrappa** and K. Namratha (**Invited Talk**)  
Current Trends in the Hydrothermal Technology for the Processing of Functional Advanced Materials  
6<sup>th</sup> Trilateral MRS Symposium (India, China and Singapore) Nov.23-25, 2015, IISER, Chandigarh, India
2. **K. Byrappa** and K. Namratha (**Plenary Talk**)  
Hydrothermal Growth and Properties of Metal Oxide Nanocrystals  
19<sup>th</sup> NSCG 2015, March. 12, 2015, Vellore, India

3. C. S. Vicas, K. Namratha and **K. Byrappa**  
A Detailed Risk Assessment of Hydrothermally Synthesized Nanocrystals for Biomedical Usage 19<sup>th</sup> NSCG 2015, March. 14, 2015, Vellore, India
4. D.S.Keerthana, K. Namratha and **K. Byrappa**  
Fabrication of Biocompatible Magnetite Crystals under Mild Conditions 19<sup>th</sup> NSCG 2015, March. 14, 2015, Vellore, India
5. P. Shubha, K. Namratha, C. S. Vicas and **K. Byrappa**  
Chick Embryo Genotoxicity Analysis of the Green Medicine, *Embllica officinalis* Aqueous Extract and Its Action on Endodontic Pathogens 19<sup>th</sup> NSCG 2015, March. 13, 2015, Vellore, India
6. Abdo Hezam, K. Namratha and **K. Byrappa**  
Synthesis and Characterization of Highly Crystalline Zinc Oxide Nanoflowers via Surfactant-Assisted Hydrothermal Method 19<sup>th</sup> NSCG 2015, March. 13, 2015, Vellore, India
7. L. Kashinath, K. Namratha and **K. Byrappa**  
Microwave Assisted Facile Hydrothermal Synthesis of ZnO-GO Nanocomposites and Photodegradation of Methylene Blue ICRANN 2014, Dec 15-16, 2014, Vellore, India
8. **K. Byrappa** and K.Namratha (**Invited Talk**)  
Processing of Metal oxide Nanoparticles for Biomedical Applications from Nanotechnology Perspective Nanoscience and Nanotechnology Conference, Feb. 21, 2014, India
9. Abdo Hezam, K. Namratha and **K. Byrappa (Invited Talk)**  
Hydrothermal Synthesis of High Crystalline TiO<sub>2</sub> without Calcination IICFC 2014, Dec. 29, 2014, India
10. **K. Byrappa** and K.Namratha (**Invited Talk**)  
Nano geoscience – from Geology to Technology National seminar on current Trends of Research in Precambrian Geology and Vision - 2020, March. 20 – 21, 2013, India
11. Shanthini Keerthana, K. Namratha, and **K. Byrappa**  
Biocompatibility testing of Iron oxides synthesized under soft reduced hydrothermal conditions. International conference of IUMRS-ICA, Dec. 16-20, 2013, India
12. **K. Byrappa** and K. Namratha (**Invited Talk**)  
Role of in situ Modification and selective doping of Metal oxides for controlled morphology and properties

43<sup>rd</sup> National seminar on Crystallography and International workshop on Application of X-ray diffraction for Drug Discovery, Nov. 21- 23, 2013, India

13. **K. Byrappa** and K. Namratha  
Organic assisted solution processing of TiO<sub>2</sub>, ZnO, NiFe<sub>2</sub>O<sub>4</sub> and Fe<sub>3</sub>O<sub>4</sub> particles for applications  
International conference of IUMRS-ICA, Dec. 16-20, 2013, Bangalore, India.
14. K. Namratha and **K. Byrappa**  
Selectively Doped Zinc Oxide Polyscale Designer Crystals,  
41<sup>st</sup> National Seminar on Crystallography, 08-10, Oct. 2012, Chennai, India.
15. **K. Byrappa** and K. Namratha  
Morphology Control of TiO<sub>2</sub> and ZnO Crystals under Hydrothermal and Conditions (**Invited Talk**)  
41<sup>st</sup> National Seminar on Crystallography, 08-10, Oct. 2012, Chennai, India.
16. K. Namratha and **K. Byrappa**  
Novel Solution Routes Synthesis, Surface Modification and Photocatalytic Properties of and Selectively Doped Zincite Nanomineral  
National Seminar on Recent Advances in Mineral Sciences and Their Applications (RAMSTA) & Golden Jubilee Celebrations of the Mineralogical Society of India, 17-18, March 2011, Mysore, India
17. **K. Byrappa** and K. Namratha (**Keynote Talk**)  
Nanomineralogy- from Geology to Technology  
National Seminar on Recent Advances in Mineral Sciences and Their (RAMSTA) & Golden Jubilee Celebrations of the Mineralogical Society of India, 17-18, March 2011, Mysore, India
18. **K. Byrappa** and K. Namratha (**Invited Talk**)  
40<sup>th</sup> National Seminar on Crystallography, 26-28, Nov. 2011, Hyderabad, India
19. K. Namratha, **K. Byrappa** and Ravishankar Rai  
Design and Fabrication of in situ surface modified ZnO Nanohybrid Crystals and their Biological Activities  
40<sup>th</sup> National Seminar on Crystallography, 26-28, Nov. 2011, Hyderabad, India
20. **K. Namratha, P. Natraj, K. Meghana and K. Byrappa**  
Morphology and Characterization of Codoped ZnO and its Photocatalytic Applications  
40<sup>th</sup> National Seminar on Crystallography, 26-28, Nov. 2011, Hyderabad, India
21. **K. Byrappa**  
Recent Advances in Nanomaterials Processing (**Plenary Talk**)  
Advances in New Engineering Materials and Characterization (AMC-2010) 28.12.2010, Sullia, D.K., India

22. Parwin Tabasom and **K. Byrappa**  
Hydrothermal Synthesis and Characterization of TiO<sub>2</sub> for Photocatalytic Degradation of Brilliant Blue Dye  
Advances in New Engineering Materials and Characterization (AMC-2010)  
28.12.2010, Sullia, D.K., India
23. **K. Byrappa** and K. Namratha  
Synthesis and Characterization of Metal Oxides for Energy Applications (**Invited Talk**)  
International Conference on Applications of Renewable and Sustainable Energy for Industry and Society (REIS 2010), December 16-18, 2010, Hyderabad, India.
24. K. Namratha and **K. Byrappa**  
Synthesis and Characterization of ZnO under mild Hydrothermal Conditions  
International Conference on Applications of Renewable and Sustainable Energy for Industry and Society (REIS 2010), December 16-18, 2010, Hyderabad, India.
25. Tabasom Parvin and **K. Byrappa**  
Hydrothermal Synthesis, Characterization and Photocatalytic Activity of TiO<sub>2</sub> Polyscale Crystals for Rhodamine B Degradation  
International Conference on Applications of Renewable and Sustainable Energy for Industry and Society (REIS 2010), December 16-18, 2010, Hyderabad, India.
26. **K. Byrappa** and K. Namratha  
Design and Synthesis of Advanced High Melting Nanocrystals through Novel Routes of Solution Processing (**Invited Talk**)  
39<sup>th</sup> National Seminar on Crystallography, October 25-27, 2010, Jammu, India
27. K. Namratha and **K. Byrappa**  
In Situ Surface Modification of ZnO Nanocrystals under Solvothermal Conditions and their Photocatalytic Properties  
39<sup>th</sup> National Seminar on Crystallography, October 25-27, 2010, Jammu, India
28. Tabasom Parvin and **K. Byrappa**  
Surface Modification of TiO<sub>2</sub> and ZnO Polyscale Crystals and their Environmental Applications  
39<sup>th</sup> National Seminar on Crystallography, October 25-27, 2010, Jammu, India
29. **K. Byrappa**, S.P. Madhusudan and B. Basavalingu  
Hydrothermal Growth of High Melting Polyscale Crystals (**Invited Talk**)  
National Symposium on the Growth of Detector Grade Single Crystals (NSGDSC-2009)  
Nov. 19-21, 2009, BARC, Mumbai, India.

30. H.P.Shivaraju, C.P.Sajan, **K. Byrappa**, T.Rungnapa, M.S.Vijay Kumar C.Ranganathaiah and T.N. Guru Row  
Hydrothermal Synthesis and Characterization of TiO<sub>2</sub> Nanostructures on the Substrate and their Photocatalytic Performance  
National Seminar on Crystallography-200, 11-13, Feb. 2009, India
31. C.P. Sajan, J Komal Kumar, S. Ananda, and **K. Byrappa**  
Hydrothermal synthesis, characterization and application of In:ZnO  
National Seminar on Crystallography-200, 11-13, Feb. 2009, India
32. Behzadshahmoradi, N. Sakamoto, **K. Byrappa**,  
Synthesis, Characterization And Application Of Modified Nd:Zno For Treatment Of Pharmaceutical Effluents National Seminar On Crystallography-200, 11-13, Feb. 2009, India
33. Shivaraju H.P, Touba Khosravi, **K. Byrappa**, T.Rungnapa, Vijay Kumar, C Ranganathaiah  
Hydrothermal Coating of ZnO onto Calcium Alumino Silicate Beads and its Photocatalytic Activity on Indigo Carmine Dye  
National Seminar on Crystallography-200, 11-13, Feb. 2009, India
34. B.V.Suresh Kumar, H.R. Ravi, **K. Byrappa**, C. Ranganathaiah, Siddaramaiah, M.B. Shayan K.S. Manjula  
Ftir And Electrical Properties Of Polyurethane – Zeolitic Composites  
National Seminar on Crystallography-200, 11-13, Feb. 2009, India
35. B. Basavalingu, H.N. Girish, B.V. Suresh Kumar, M.A. Shankara And **K. Byrappa**  
Synthesis and Characterization of Rare Earth Doped Orthorhombic Yttrium Aluminum Perovskites (Yap)  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India
36. S. Ananda. Chaitanyalakshmi. G, Meenakshi. P. G., **K. Byrappa**  
Synthesis Of Ru (Iii) Doped Ago Nanocomposites By Electrolytic Method And Degradation Study Of Indigocarmine Dye  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India
37. C.P. Sajan, S. Mantula, S. Ananda, and **K. Byrappa**  
Application of Hydrothermally synthesized Sn:ZnO in the Photodegradation of Pharmaceutical Effluent  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India
38. H.R. Ravi, B.V.Suresh Kumar, C. Ranganathaiah, B.Basavalingu , D.RavannaSiddaiah and **K. Byrappa**  
Studies on Electrical Properties of Rare Earth Doped Aluminophosphate Zeolites  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India



39. Chaitanya Lakshmi, S.Ananda, N.M.Made Gowda, **K. Byrappa**  
Synthesis of Zn-Pyridoxine and Ru- Pyredoxine metal –Vitamin Crystals and Study of Biological Activity  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India
40. H. S. Dayananda, K. S. Lokesh, and **K. Byrappa**  
Long-Term Leachate Studies and Micro-Structural Analysis of Stabilized Electroplating Sludge in Cement Matrix  
38<sup>th</sup> National Seminar on Crystallography-200, 11-13, Feb. 2009, India
41. **K. Byrappa**  
Hydrothermal Green Processing of Advanced Powder Materials  
International Conference on Recent Trends in Nanostructured Materials and Their Applications, 19-20, December, 2008, Hyderabad, India
42. **K. Byrappa.**  
Hydrothermal Processing of Advanced Nanomaterials  
Internalational Confernece Advances on nanotechnology, 06 August, 2008, Raipur, India
43. B. Basavalingu, **K. Byrappa**, P. Madhusudan, M. Yoshimura  
Hydrothermal synthesis of sp<sup>3</sup> bonded carbon from  $\beta$ -SiC-organic compound system  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India
44. T. Rungnapa, S. Pakamard, H.P. Shivaraju, C.P. Sajan, C. Ranganathaiah, S. Ananda and **K. Byrappa**  
Titania coating on calcium aluminum silicate Beads under hydrothermal conditions for the degradation of toxic organics
45. K.S.Manjula, Siddaramaiah, **K. Byrappa**, T.Jeevananda and Joong- Hee Lee  
Investigations on Silk Fiber Reinforced Chain Extended PolyurethaneComposites.  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India.
46. K.S. Manjula, M.B. Shayan, C.P. Sajan, H.P. Shivaraju, Siddaramaiah and **K. Byrappa**  
Preparation Of Metal Oxide:Polymer Composites, Characte-Rization And Applications  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India
47. A.S. Dayananda, B.Basavalingu, **K. Byrappa**, K. Lal, K. Soga and M. Yoshimura  
Hydrothermal coating of Ag<sub>2</sub>S nanoparticles on CNT templates  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India
48. H.P. Shivaraju, C.P. Sajan, M.B. Shayan, T. Rungnapa, S. Pakamard, S. Ananda and **K. Byrappa**

Hydrothermal Coating of ZnO on Calcium Alumino-Silicate Beads and Their Application in the Photocatalytic Degradation of Amaranth Dye  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India.

49. C.P. Sajan, H.S. Shivaraju, K.M. Lokanatha Rai, S. Ananda, M.B. Shayan, T. Tonthai, G.V. Narasimha Rao and **K. Byrappa**  
Photocatalytic Degradation of Textile Effluent Using Hydrothermally Synthesized Mo: TiO<sub>2</sub>  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India.
50. C.K. Chandrashekar, B. Basavalingu, K.M. Lokanatha Rai, S. Ananda, T. Tonthai, K. Soga and **K. Byrappa**  
Novel Methods Of Synthesis Of R<sup>3+</sup>:YVO<sub>4</sub> (Where R=Nd,Er) Crystals  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India.
51. **K. Byrappa** and B. Basavalingu  
Materials Processing Under Geomimetic Conditions  
International Conference IUMRS-ICAM 2007, 8-13 October, 2007, Bangalore, India.
52. B. Basavalingu, **K. Byrappa**, P. Madhusudan, A.S. Dayananda, Krishan Lal and Y. Yoshimura  
Crystalization of carbon nanoforms and nanocrystals from supercritical aqueous solutions  
35<sup>th</sup> National Seminar on Crystallography, 22-24 Feb. 2006, NPL, New Delhi
53. **K. Byrappa**, A.K. Subramani, C.P. Sajan, K.M. Lokanatha Rai and S. Ananda  
Hydrothermal preparation of TiO<sub>2</sub>, ZnO crystallite and their applications in photocatalytic degradation of DDT and Rhodamine B dye  
35<sup>th</sup> National Seminar on Crystallography, 22-24 Feb. 2006, NPL, New Delhi
54. B. Basavalingu, H. N. Girish, **K. Byrappa** and Kohei Soga  
Hydrothermal synthesis and characterization of orthorhombic yttrium aluminium Perovskites  
35<sup>th</sup> National Seminar on Crystallography, 22-24 Feb. 2006, NPL, New Delhi
55. **K. Byrappa**, C.K. Chandrashekar, Ramningaiah and K.M. Lokanatha Rai  
Crystal growth and morphology control of Nd; YVO<sub>4</sub> under mild hydrothermal conditions  
35<sup>th</sup> National Seminar on Crystallography, 22-24 Feb. 2006, NPL, New Delhi
56. **K. Byrappa**  
Recent Trends in Advanced Materials Processing under Hydrothermal Conditions  
National Workshop on Recent Advances in Structural Characterization of Materials, March 30, 2005, NPL, New Delhi.
57. **K. Byrappa**, C.K. Chandrashekar, Ramaningaiah and K.M.L. Rai

In-situ Fabrication of the Crystal Morphology of the Nd: YVO<sub>4</sub> and Nd: GdVO<sub>4</sub> under Hydrothermal Conditions  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India

58. **K. Byrappa**, M.H. Sunitha, A.K. Subramani, S. Ananda, K.M.L. Rai, B. Basavalingu and Yoshimura M.  
Surface Modification of TiO<sub>2</sub> under Hydrothermal Conditions and its use in the Degradation of Textile Dyes  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India
59. S. Srikantaswamy, **K. Byrappa**, B. Basavalingu, P. Madhusudan, A. Dayananda and M. Yoshimura  
Synthesis of Multiwalled Carbon Nanotubes under Hydrothermal Conditions  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India
60. **K. Byrappa**, B.V.S. Kumar, R. Somashekar, C. Ranganathaiah, R. Dinesh, K.M.L. Rai and S. Ananda  
Hydrothermal Crystallization and Characterization of R<sup>+3</sup>: VPI-5, where R=Ce, Pr and Nd  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India
61. **K. Byrappa**, P. Madhusudan, A.S. Dayananda and M. Yoshimura.  
Synthesis of Carbon Nanoparticles under Hydrothermal Conditions  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India
62. **K. Byrappa**  
Recent Trends in Hydrothermal Technology (**Invited Talk**)  
16<sup>th</sup> Annual General Body Meeting Materials Research Society of India, Feb. 10-12, 2005, Pune, India
63. **K. Byrappa**, A.K. Subramani, S. Ananda, K.M. Lokanatha Rai, R. Dinesh, M.H. Sunitha, B. Basavalingu and M. Yoshimura  
Photocatalysis: Fundamentals and Applications in the Organic Waste Destruction  
Interantional Conference on Water and Health (WAH 05), January 22-23, 2005 Mysore, India
64. S. Kousalya, **K. Byrappa** and C. Ranganathaiah  
Industrial Effluent Action on Mineral Alteration in and Around Nanjangud, Karnataka, India  
Interantional Conference on Water and Health (WAH 05), January 22-23, 2005 Mysore, India

65. **K. Byrappa**, M.H. Sunitha, A.K. Subramani, S. Ananda, K.M. Lokanatha Rai, B. Basavalingu and M. Yoshimura  
Photocatalytic Degradation and Kinetics of Brilliant Yellow Dye Using Hydrothermally Prepared ZnO Coated TiO<sub>2</sub>  
International Conference on Water and Health (WAH 05), January 22-23, 2005 Mysore, India
66. **K. Byrappa**  
Recent Advances in Materials Processing Under Hydrothermal Conditions (Invited Paper)  
Seminar on Soft Processing of Ceramic Materials, Ceramic Society of India, Bangalore Chapter, BHEL, Bangalore, January 15, 2005
67. C. Ranganathaiah, G.N. Kumaraswamy, H.B. Ravikumar, A.K. Subramani, M.S. Vijayakumar, M.K. Devaraju and **K. Byrappa**  
Positron Annihilation Lifetime Spectroscopy for the Characterization of Porous Materials  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
68. **K. Byrappa**, M.H. Sunitha, A.K. Subramani, S. Ananda, K.M. Lokanatha Rai, B. Basavalingu and M. Yoshimura  
Hydrothermal Preparation of Neodymium Coated Titanium Oxide and Its Application in the Photocatalytic Degradation of Procion Red Dye  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
69. P. Madhusudan, B. Basavalingu, **K. Byrappa**, A.S. Dayananda and H.N. Girish  
Synthesis and Characterisation of Some Orthorhombic Carbonates under Hydrothermal Conditions  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
70. **K. Byrappa**, Tienchai Tonthai, S. Kousalya and C. Ranganathaiah  
Hydrothermal Treatment of Effluent Affected Polluted Soil of Nanjangud, Karnataka, India  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
71. S. Ananda, K.B. Sudharani, **K. Byrappa** B.V. Suresh Kumar  
Kinetic Study of D-Glucose Oxidation by Sodium-N-Chlorobenzene Sulphonamide (Chloramice-B) with Zeolite (AlPO<sub>4</sub>-5) as Catalyst  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.

72. **K. Byrappa**, M.K. Devaraju, P. Madhusudan, A.S. Dayananda, B. Basavalingu, S. Ananda, K.M. Lokanatha Rai and H.N. Girish  
Synthesis and Characterization of Calcium Alumino Silicate Hydrate  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
73. **K. Byrappa**, P. Madhusudan, B. Basavalingu and M.S. Vijayakumar  
Solubility Studies of Hydrothermally Synthesised Calcite Crystals  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004
74. S. Ananda, A.K. Subramani, **K. Byrappa** and K.M. Lokanatha Rai  
Photocatalysis: Kinetics and Mechanism  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
75. E. Aparna, K.M. Lokanatha Rai, **K. Byrappa**, M. Sureshbabu, R.L. Jagadish and S.L.Gaonkar  
Synthesis of Thioesters and Thioamides under Solvothermal Condition using Thiourea as Thionating Agent.  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
76. **K. Byrappa**, A.K. Subramani, S. Ananda, K.M. Lokanatha Rai, R. Dinesh, M.H. Sunitha, B. Basavalingu and K. Soga.  
Impregnation of ZnO onto Activated Carbon Surface by Hydrothermal Technique and its Application.  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
77. **K. Byrappa**, Ramaningaiah and Kohei Soga  
Crystal Growth and Morphology of Nd: YVO<sub>4</sub> under Hydrothermal Conditions.  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.
78. Dinesh Rangappa, Takeshi Fujiwara, Tomoaki Watanabe, **K. Byrappa** and Masahiro Yoshimura.  
Synthesis of Crystallized ABO<sub>4</sub> (A=Ba, Sr, Ca; B=Mo, W) Film by Chemical Reaction Method at Room Temperature.  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore, August 24-27, 2004.

79. **K. Byrappa**, M.K. Devaraju, M.S. Vijaya Kumar, B.V. Suresh Kumar, B. Basavalingu, S. Ananda, K. M. Lokanatha Rai and C.K. Chandrashekar  
Synthesis and Characterization of Some Selected Microporous Aluminophosphate Zeolites  
6<sup>th</sup> International Conference on Solvothermal Reactions, University of Mysore, Mysore,  
August 24-27, 2004.
80. **K. Byrappa**, M.S. Vijaya Kumar, B.V. Suresh Kumar, S. Ananda and K.M.L. Rai  
Hydrothermal Synthesis, Electrical Conductivity and Catalysis Reaction of  
Aluminophosphate Zeolites  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, January 20-27, 2003.
81. **K. Byrappa**, Ramaningaiah and B. Basavalingu  
Crystal Growth of Nd: YVO<sub>4</sub> Using Hydrothermal Technique at Different Temperature  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, January 20-27, 2003
82. **K. Byrappa**, B. Nirmala, K.M. Lokanatha Rai and S. Ananda  
Crystal Growth Mechanism for Rare Earth Vanadates under Mild Hydrothermal Conditions  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, January 20-27, 2003
83. **K. Byrappa**, A.K. Subramani, K.M.L. Rai, B. Basavalingu, S. Ananda and S. Srikantaswamy  
Hydrothermal Impregnation of Designer Particulates on Activated Carbon  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, January 20-27, 2003
84. S. Srikanta Swamy, Masahiro Yoshimura, **K. Byrappa**, B. Basavalingu and A.K. Subramani  
Stability and Behaviour of Carbon Nanotube under Hydrothermal Conditions  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, January 20-27, 2003
85. **K. Byrappa**  
Hydrothermal Growth of Crystal  
International School on Crystal Growth of Technologically Important Electronic Materials,  
University of Mysore, Mysore, India, January 20-27, 2003
86. R. Dinesh, **K. Byrappa**, K. M. L. Rai, and M. Yoshimura  
Impregnated Activated Photocatalyst for Aromatic Hydrocarbons  
National Seminar on Environmental Hazards-Priorities and Protection in the 21<sup>st</sup> Century of  
Environmental Sciences, University of Mysore, India. 21 March 2001
87. **K. Byrappa**, J.R. Paramesha and A.B. Kulkarni



- Growth and Characterization of Rare Earth Phosphates  
National Seminar on Electronic Materials and Applications, Gulbarga, January 18-20, 1999
88. **K. Byrappa**, B. Nirmala and A.B. Kulkarni  
Growth of Optoelectronic Crystals  
National Seminar on Electronic Materials and Applications, Gulbarga, January 18-20, 1999
89. **K. Byrappa**  
Growth of Electronic Grade Crystals  
National Seminar on Electronic Materials and Applications, Gulbarga, January 18-20, 1999
90. **K. Byrappa** and B.V.Suresh Kumar  
Hydrothermal Synthesis of VPI-5  
National Seminar on Crystal Growth, Karaikudi, January 1998
91. **K. Byrappa** and J.R.Parmesha  
Crystal Growth of Rare Earth Phosphates  
National Seminar on Crystal Growth, Karaikudi, January 1998
92. **K. Byrappa**, Parmesha, J.R. and Nirmala. B.  
Crystal Growth and Morphology of Laser Crystals  $\text{NdP}_5\text{O}_{14}$ ,  $\text{KNdP}_4\text{O}_{12}$  and Nd:  $\text{YVO}_4$   
28<sup>th</sup> National Seminar on Crystallography, Kottayam, Sept. 24-26, 1997.
93. **K. Byrappa** and B.V.Suresh Kumar  
Hydrothermal Synthesis of Aluminophosphates Zeolites.  
28<sup>th</sup> National Seminar on Crystallography, Kottayam, Sept. 24-26, 1997.
94. A.B.Kulkarni, V.Rajeev, **K. Byrappa** and B.Sanjeeva Ravi Raj.  
Impedance Spectroscopic Analysis of Some Superionic Pyrophosphates  
DAE-BRNS Symposium on Electroceramics, Rajkot, March 13-15, 1996
95. A.B.Kulkarni, V.Rajeev, **K. Byrappa** and B.Sanjeeva Ravi Raj.  
Frequency Dependent Conductivity in Mixed Copper and Silver Oxide – a New Superionic Conductor  
DAE-BRNS Symposium on Electroceramics, Rajkot, March 13-15, 1996
96. A.B.Kulkarni, V.Rajeev, **K. Byrappa** and B.Sanjeeva Ravi Raj  
Electro-Optic Phenomena in the New Superionic Pyrophosphate  
DAE-BRNS Symposium on Electroceramics, Rajkot, March 13-15, 1996.
97. **K. Byrappa**, B.Sanjeeva Ravi Raj, V.Rajeev, V.J.Hanumesh, A.R. A.B.Kulkarni  
Mixed Condensed Phosphates – New Solid Electrolytes

II National Conference on Solid State Ionics, Madras, Feb. 15-17, 1996

98. **K. Byrappa**, V.P.Jayantharaja, V.Rajeev, V.J.Hanumesh, A.R.Kulkarni & A.B.Kulkarni  
Ionic Conductivity Studies in Lithium Borates from  $\text{Li}_2\text{O}-\text{B}_2\text{O}_3-\text{H}_2\text{O}$  System  
II National Conference on Solid State Ionics, Madras, Feb. 15-17, 1996.  
AIXTRON Workshop on State of the Art MOCVD Technology Nov. 27<sup>th</sup>, 1995, Bangalore, India.
99. **K. Byrappa**, B.V.Umesh Dutta and K.Vasundhara  
Ionic Conductivity and Crystallographic data for  $\text{Hf}_2\text{CoP}_2\text{O}_7$  and  $\text{Hf}_2\text{MnP}_2\text{O}_7$  Crystals  
V National Seminar Crystal Growth, Nov. 18-20, 1995
100. **K. Byrappa** and K.V.K.Shekar  
Hydrothermal Synthesis, Crystal Structure and Properties of  $\text{LiH}_2\text{B}_5\text{O}_9$ .  
V National Seminar Crystal Growth, Nov. 18-20, 1995
101. Amita Jain and **K. Byrappa**  
Crystal Growth and Characterization of  $\text{NaRE}(\text{WO}_4)_2$ .  
V National Seminar Crystal Growth, Nov. 18-20, 1995
102. **K. Byrappa**  
Recent Progress in the Growth and Characterization of  $\text{Na}^+$  Superionic Phosphates  
V National Seminar Crystal Growth, Nov. 18-20, 1995.  
X National Seminar of ISSG Material Science and Technology of Glass Nov. 15-17, 1995, BARC, Bombay. Workshop on Glass to Metal Seals, Nov. 13-14, 1995, BARC, Bombay.
103. **K. Byrappa**  
Synthesis and Characterization of Aluminium Phosphate Zeolites  
Colloquium on ZEOLITES, Kolhapur, October 10-11, 1995.
104. **K. Byrappa**  
Hydrothermal Growth of Electronic Crystals  
International School on Crystal Growth of Electronic Materials, Feb. 6-15, 1995, Madras.  
National Workshop on Project Vasundhara, 27<sup>th</sup> June, 1994, Bangalore.
105. **K. Byrappa**  
Growth of Economic Minerals  
National Symposium on Materials for Development, Warangal, Andhra Pradesh, March 13-14, 1993.
106. **K. Byrappa**  
Recent Progress in the  $\text{Na}^+$  Superionic Phosphates

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Lecture Series of the Osmania University, Hyderabad, Feb. 15-16, 1993.

107. **K. Byrappa** and S.Srikantaswamy  
Hydrothermal Synthesis and Characterization of Hexaferrites  
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108. A.Cardenas, J.Solans, **K. Byrappa** and K.V.K.Shekar  
Structure of  $\text{LiH}_2\text{B}_5\text{O}_9$ .  
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109. **K. Byrappa**, B.V.Umesh Dutt and G.S.Gopalakrishna  
Morphology of Some New Superionic Pyrophosphates  
XXIII National Seminar on Crystallography, Jaipur, Rajasthan, 23-25, March 1992, India.
110. **K. Byrappa** and Amita Jain  
Crystal Growth and Morphology of Rare Earth Phosphates  
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111. **K. Byrappa** and K.V.K.Shakar  
Hydrothermal Synthesis, Crystal Structure and Properties of  $\text{Li}_4\text{H}_2\text{B}_2\text{O}_6$ .  
XXIII National Seminar on Crystallography, Jaipur, Rajasthan, 23-25, March 1992, India.
112. **K. Byrappa**  
Crystal Chemistry and Crystal Growth of Technology Materials-Silicates and Phosphates.  
XXIII National Seminar on Crystallography, Jaipur, Rajasthan, 23-25, March 1992.
113. **K. Byrappa**  
Some Piezoelectric Minerals – Berlinite and Diamignite  
Third INDO-Soviet Symposium on Experiment Mineralogy and Petrology
114. **K. Byrappa** and S.Srikantaswamy  
Synthesis of  $\text{AlPO}_4$  – Ceramic Binders.  
Conference on Oxide Ceramics and Technology, Kolhapur, Feb. 21-23, 1991.
115. **K. Byrappa**, B.V.Umesh Dutta, A.B.Kulkarni and S.Gali  
Growth and Characterization of  $\text{Na}_2\text{MZr}(\text{P}_2\text{O}_7)_2$ .  
XXII National Seminar on Crystal Growth. Calcutta, Dec. 26-28, 1990
116. **K. Byrappa**, G.S.Gopalakrishna, A.B.Kulkarni and S.Gali  
Synthesis and Characterization of  $\text{Na}_2\text{H}_3\text{Al}(\text{P}_2\text{O}_7)_2$ .  
XXII National Seminar on Crystal Growth. Calcutta, Dec. 26-28, 1990

117. **K. Byrappa** and K.V.K.Shekar  
Hydrothermal Synthesis and Characterization of Piezoelectric –  $\text{Li}_2\text{B}_4\text{O}_7$  Crystals.  
XXII National Seminar on Crystal Growth. Calcutta, Dec. 26-28, 1990
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119. **K. Byrappa** and G.S.Srikantaswamy  
Hydrothermal Synthesis of Hexaferrite Compounds  
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120. **K. Byrappa**  
Growth and Characterization of a New Group of Fast Ionic Conductors  
XXI National Seminar on Crystallography, BARC, Bombay, 27-29, Dec. 1989.
121. **K. Byrappa** and S.Srikanataswamy  
Thermodynamic Characteristic Berlinite Crystals.  
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122. **K. Byrappa**, R.R.Clements, S.Gali and A.B.Kulkarni  
Hydrothermal Synthesis and Characterization of New Sodium Titanates  
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123. **K. Byrappa**, S.Gali, G.S.Gopalakrishna and A.B.Kulkarni  
Synthesis and Characterization of High Temperature modification of a New Pyrophosphate  
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124. **K. Byrappa** and G.S.Gopalakrishna  
Morphological aspects of Hydrothermal Grown Superionic Phosphates  
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Explanation of Inductive Loops in the Impedance Spectra of some Superionics  
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126. S.K.Patil, A.H.Farooqui, A.B.Kulkarni, **K. Byrappa** and G.S.Gopalakrishna  
Equivalent Circuit Parameter Analysis for a New Superionic Conductor  
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127. **K. Byrappa**  
Artificial Growth of Industrial Minerals  
Seminar on Industrial Mineral in National Economy, Dec. 14 – 19, 1988, Madras.
128. **K. Byrappa**  
Growth of Industrial Minerals  
National Seminar on Industrial Minerals in the National Economy, Anna University,  
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129. **K. Byrappa**  
Growth and Characterization of Piezoelectric Berlinite  
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Cultivation of Sciences, Calcutta, March 22-24, 1988.  
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131. A.B.Kulkarni, S.K.Patil, **K. Byrappa** and G.S.Gopalakrishna  
Inclusion of Inductance in Equivalent Circuit Representation of Electrochemical System  
XXX Solid State Physics Symposium, Dec. 27-31, 1987, Bombay.
132. **K. Byrappa**  
Growth and Characterization of New Superionic Conductors (REVIEW)  
XIX National Seminar on Crystallography, Dec. 18-20, 1987, Chengancherry, Kerala
133. **K. Byrappa** and S.Srikanataswamy  
Thermal Expansion of Berlinite Crystals  
XIX National Seminar on Crystallography, Dec. 18-20, 1987, Chengancherry, Kerala.
134. **K. Byrappa**, S.Srikantaswamy and J.Shashidhara Prasad  
Synthesis of Y: AlPO<sub>4</sub>  
3<sup>rd</sup> National Seminar on Crystal Growth, Feb. 16-19, 1987.
135. **K. Byrappa**, A.B.Kulkarni, N.B.Desai and S.Srikantaswamy  
Growth and Characterization of NH<sub>4</sub>Zr<sub>2</sub>V<sub>3</sub>O<sub>12</sub>  
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Growth and Characterization of NaCu<sub>2</sub>ZrP<sub>3</sub>O<sub>12</sub>

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137. **K. Byrappa**  
Growth of Rare Earth Phosphates  
III National Seminar on Crystal Growth, Feb. 16-19, 1987, Madras
138. **K. Byrappa**, G.S.Gopalakrishna, D.S.Mahadevappa and J.Shashidhara Prasad  
Thermal Expansion Study of Na<sub>2</sub> (La,Al)ZrP<sub>3</sub>O<sub>12</sub> Crystals  
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139. **K. Byrappa**, N.B.Desai, A.B.Kulkarni and S.Srikantaswamy  
Synthesis and Characterization of some Vanadates  
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140. **K. Byrappa**  
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National Summer School on Crystal Growth. May, 1986, Madras.
141. **K. Byrappa**, A.B.Kulkarni, N.B.Desai and G.S.Gopalakrishnan  
Creation of Superionics by Ion implantation of Natural Minerals.  
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142. **K. Byrappa**,  
Synthesis and Characterization of some New Super Ionic Conductors Na<sub>2</sub>(La, Me) ZrP<sub>3</sub>O<sub>12</sub>&  
NaMe<sub>2</sub>ZrP<sub>3</sub>O<sub>12</sub> Crystals.  
Symposium on Crystal Growth, Jan. 29-31, 1986, Calcutta, India.
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Influence of Admixtures on the Crystallization in Polymorphic Transitions of Piezoelectric  
Aluminium Orthophosphate.  
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Synthesis of a New Proton Conductor – NH<sub>4</sub>Zr<sub>2</sub>V<sub>3</sub>O<sub>12</sub>.  
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145. **K. Byrappa**, G.S.Gopalakrishna, D.S.Mahadevappa and J.Shashidhara Prasad  
Thermal Expansion Study of NaNi<sub>2</sub>ZrP<sub>3</sub>O<sub>12</sub>.  
Workshop on Material Science, IIT, Kanpur, India, Feb. 28<sup>th</sup> to March 2<sup>nd</sup>, 1985.
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Hydrothermal Synthesis and Characterization of Na<sub>2</sub>(La, Me) ZrP<sub>3</sub>O<sub>12</sub> Crystals

National Workshop on Material Science IIT, Kanpur, India Feb. 28 March 2, (1985)  
International School on Photovoltaics, Dept. of Non-Conventional Energy, Dec. 1984,  
Bangalore.

147. **K. Byrappa**, G.S.Gopalakrishna and A.B.Kulkarni  
Hydrothermal Growth of NASICON Group of Fast Ionic Conductors  
Solid State Symposium, BARC, Bombay, Dec. 22-26, 1984.
148. **K. Byrappa**  
Growth of Alkaline Rare Earth Phosphates  
International School on 'Physics of Materials, IIT, Madras, India, September 4-22, 1984.

### **Technical Reports Prepared**

Prepared technical reports for several funding agencies of Government of India and companies based on the research work carried out.

### **Interests**

- *Developing New Teaching Methods and Inspiring Students in the Subject through Closer Interaction and Popularize my Field of Specialization.*
- *Enriching Students' Knowledge not only in the prescribed syllabus, but also in Science as a whole and tuning their attitude towards Interdisciplinary Nature of Science.*

### **Other Activities**

- a. *Delivers Extension Lectures on : Mineral and Rock Formation in Nature, Crystal Growth, Mineral Synthesis, Earthquakes, Volcanoes, Tsunamis,*
- b. *Environmental Education, Globalization of Higher Education, etc in South Indian Universities in Karnataka, Tamilnadu, Kerala, & Pondicherry*
- c. *Actively participated in the Cultural Activities in the Moscow State University, Moscow, Russia.*
- d. *Actively participated in the Cultural Activities in the Mysore University, India.*
- e. *Delivered Radio Talks on the All India Radio on the topic Crystal Growth Science.*
- f. *Delivered Popular Science Lectures for the School Children and College Students and other Public Institutions.*
- g. *Actively participated in the International Red Cross Society Activities during the Higher Secondary School Days, and also passed the qualifying examination.*
- h. *Very Fluent in Russian Language.*
- i. *Working knowledge in Spanish, Japanese, French and German Languages.*



## **COVER PAGES OF MY BOOKS**

Byrappa  
Yoshimura

Handbook of  
Hydrothermal  
Technology

# HANDBOOK of Hydrothermal Technology

Technology for Crystal Growth and Materials Processing

## ADVANCES IN THE TECHNOLOGY OF HYDROTHERMAL CRYSTAL GROWTH AND MATERIALS PROCESSING

Quartz, zeolites, gemstones, perovskite type oxides, ferrites, carbon allotropes, complex coordinated compounds and many more — all products now being produced using hydrothermal technology. **HANDBOOK OF HYDROTHERMAL TECHNOLOGY** brings together the latest techniques in this rapidly advancing field in one exceptionally useful, long-needed volume.

The **HANDBOOK** provides a single source for understanding how aqueous solvents or mineralizers work under temperature and pressure to dissolve and recrystallize normally insoluble materials, and decompose or recycle any waste material. The result, as the authors show in the book, is technologically the most efficient method in crystal growth, materials processing and waste treatment. The book gives scientists and technologists an overview of the entire subject, including:

- ◆ Evolution of the technology from geology to a technology with widespread industrial use today
- ◆ Descriptions of the equipment used in the process and how it works
- ◆ Problems involved with the growth of crystals, processing of technological materials, environmental and safety issues
- ◆ Analysis of where today's technology is heading

In addition, readers get a close look at the hydrothermal synthesis of zeolites, fluorides, sulfides, tungstates, and molybdates, as well as native elements and simple oxides. Diving into the commercial production of crystals of various types, the authors clarify the effects of temperature, pressure, solvents, and various other chemical components on the hydrothermal processes.

### The Authors:

**Dr. K. Byrappa** is a Professor at the University of Mysore in India. He specializes in hydrothermal techniques, crystal growth and materials processing. He has published over 120 research articles and worked in several international laboratories. Also he has edited several books.

**Dr. Masahiro Yoshimura** is a Professor at the Tokyo Institute of Technology where he is Director of the Center for Materials Design, Materials and Structure Lab. He is editor of a number of books and author of more than 500 research articles.

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Handbook of

# Crystal Growth Technology

K. Byrappa  
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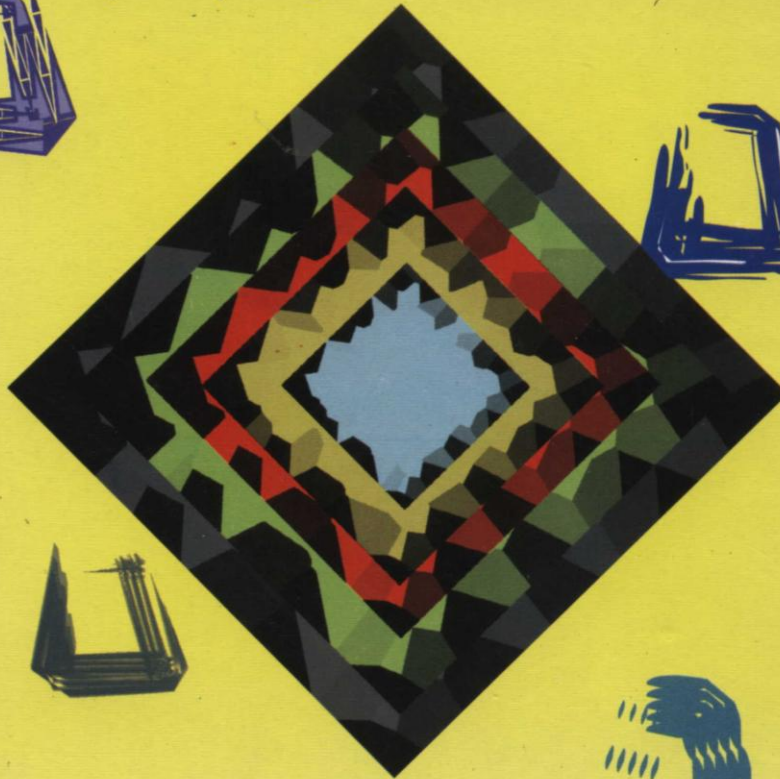
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# Crystal Growth

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**CURRENT TRENDS IN  
CRYSTAL GROWTH AND CHARACTERIZATION**

**K. BYRAPPA**

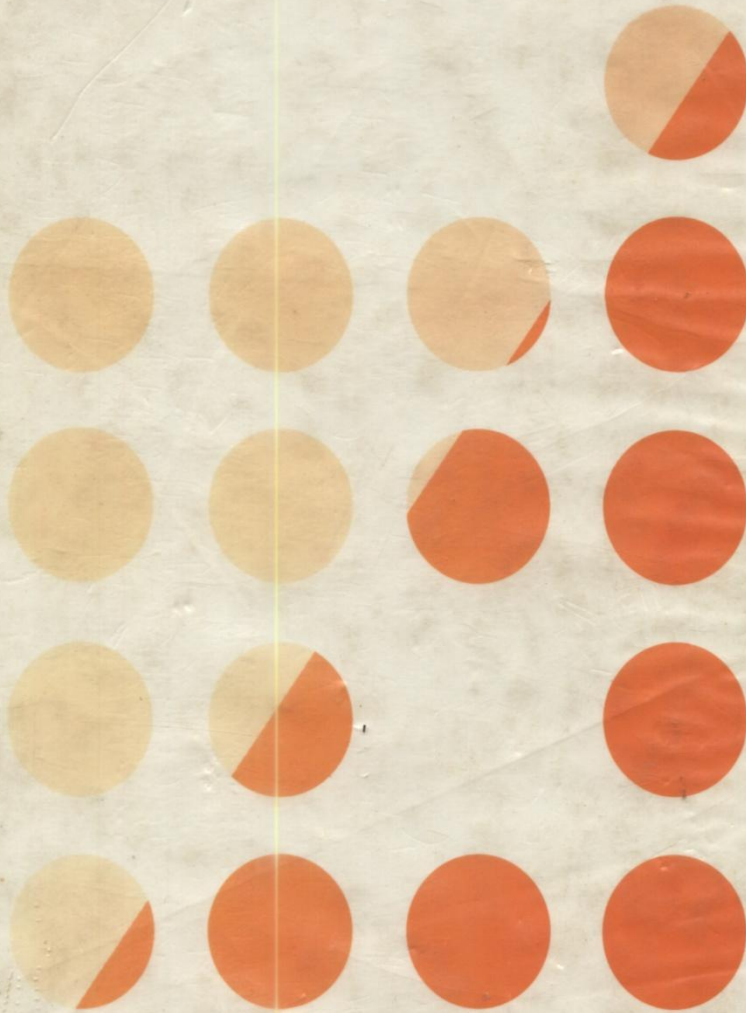


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# HYDROTHERMAL GROWTH OF CRYSTALS

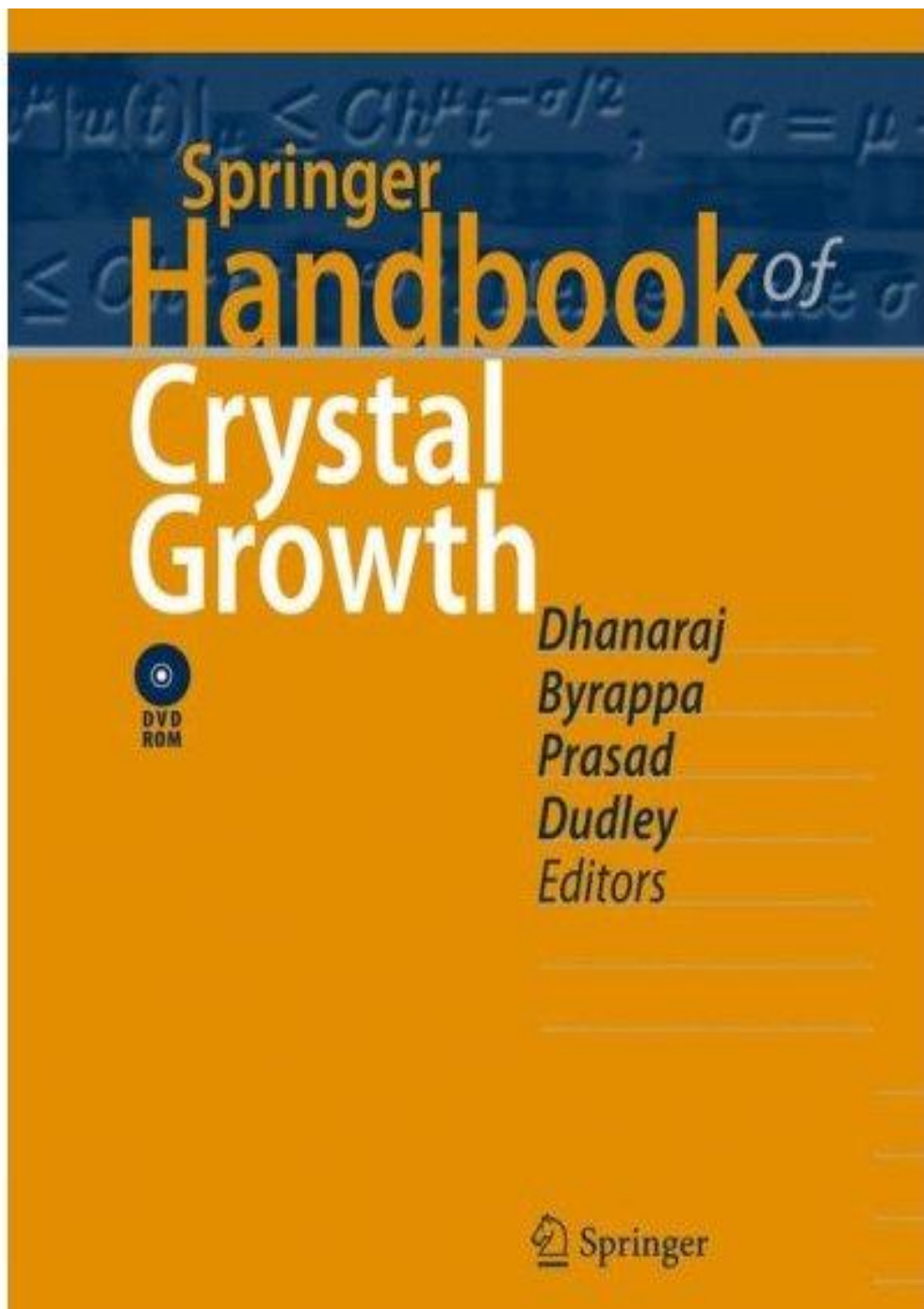
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# Materials Research Innovations

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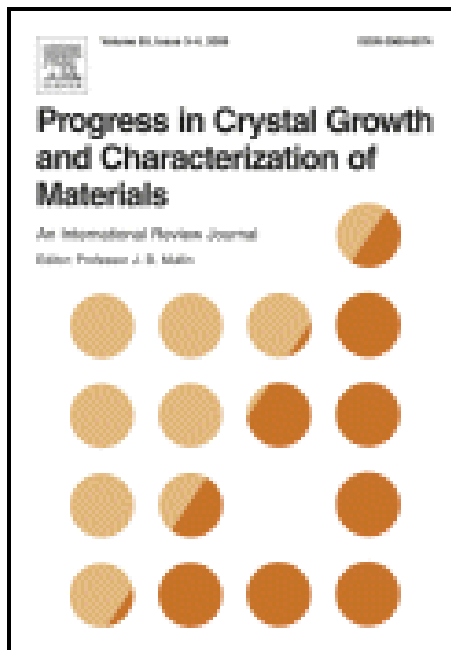
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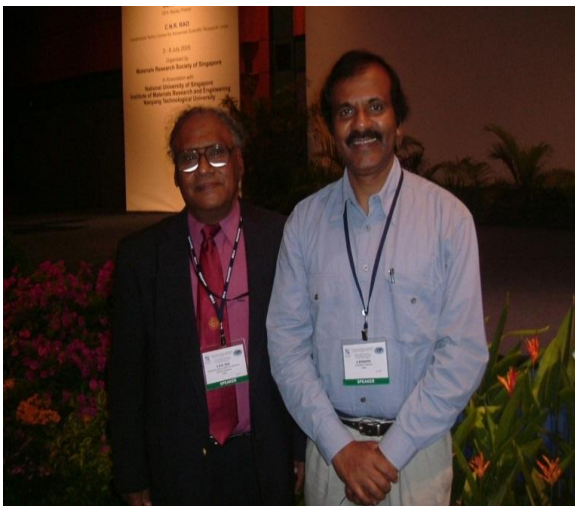
**N.B. Singh**

Crystals lie at the root of much of today's Science and Technology Center, ESSS, Linthicum  
and III-V compounds are needed for microprocessors and optoelectronics, magnetic crystals  
provide some computer memories, and crystals of all kinds are required for scientific studies and  
new applications. This journal is ...





Prof.M. Yoshimura being felicitated in the presence of Prof.C.N.R. Rao during 6<sup>th</sup> International Conference on Solvothermal Reactions held in Mysore during August 2004

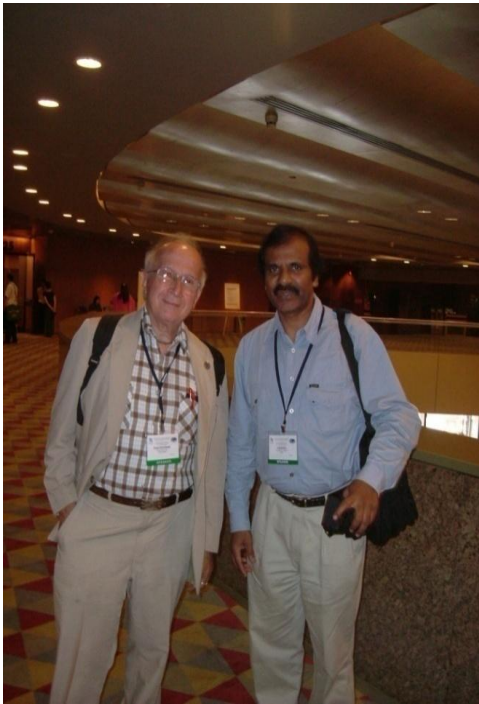


With Prof.C.N.R. Rao, of India during ICMAT-2005, in Singapore

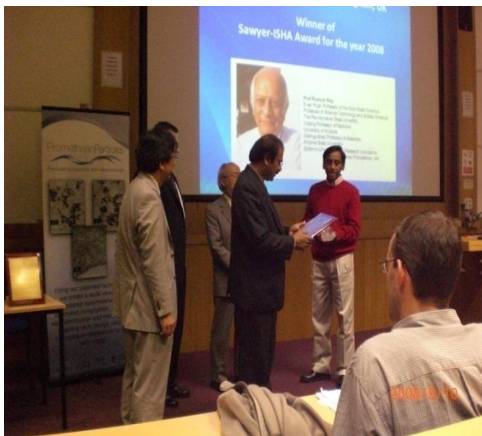


With ISHA Executive Committee Members during the Meeting in Nottingham, UK, held on Sept. 9, 2008





With Prof. Roald Hoffmann of Cornell University, USA, Nobel Laureate in Chemistry 1981



Presenting ISHA-Sawyer Lifetime Achievement Award of Prof. Rustom Roy, to Prof. S. Komarneni, USA, during ISHA-2008 conference held in Nottingham, UK, during Sept. 2008



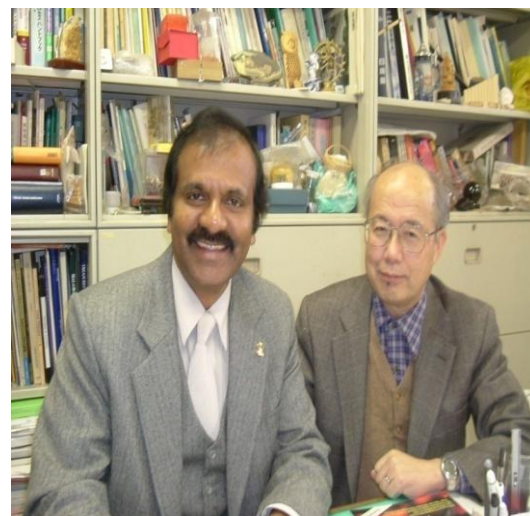
With the Scientific Program Committee Members of the XX-International Union of Crystallography Congress, during the program committee meeting held in Sicily, Italy, during May 2004



From left to right With Prof.Mortyn Poliakoff, FRS, UK (Editor in Chief of Journal of Green Chemistry) and Prof.B. V.R. Chowdhuri, President of IUMRS, and President MRS-Singapore



With Nobel Laureate in Physics 2007, Prof. Peter Grünberg of Germany



With Prof.M. Yoshimura, a close collaborator from Japan during a visit to his laboratory in October 2005





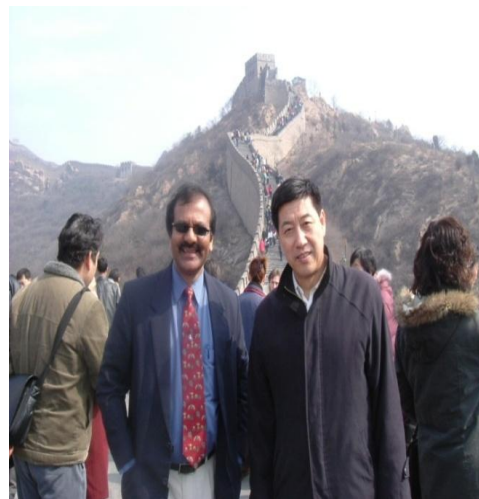
During the Executive Committee Meeting of the International Commission on Crystal Growth, held during IUCr Congress and General Assembly in Osaka, Japan, August 2008



With team of researchers from Mysore, along with Prof.M. Yoshimura and Prof.T. Adschiri, during ISHR-8 & ICSTR-6 Joint Meeting held in Sendai, Japan, during August 2006



With senior members of ISHA executive committee and some delegates of ISHR& ICSTR-6, in Sendai, Japan, August 2006



At the Great Wall of China, with Prof.Bauxin Han from the Chinese Academy, in Beijing, during Feb. 2007



As a speaker with the members of the International Commission on Crystal Growth, during an International School held at the Abdus Kalam International Center for Theoretical Physics, in Trieste, Italy during April 2001



During the Executive Committee Meeting of the International Commission on Crystal Growth, held in Florence, Italy, during August 2005



As a Keynote speaker at the SUPERGREEN 2007 held in Seoul, Korea, with delegates



During launching of “Springer Handbook of Crystal Growth” Eds.G. Dhanaraj, **K. Byrappa**, Vish Prasad and M. Dudley, during ICCG-17, Beijing, China, on 9th August 2010

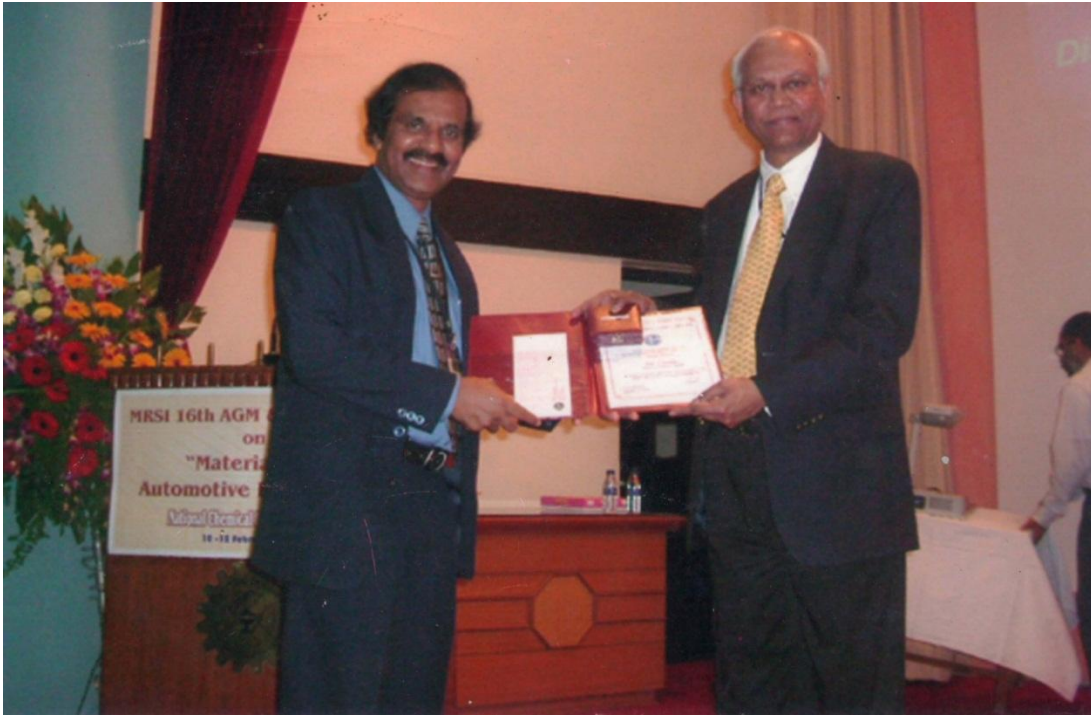


**Prof. K. Byrappa** receiving the Fellowship of the World Academy of Ceramics, in Montecatini, Italy during 12th World Ceramic Congress, held during June 6-12, 2010





**Prof.K. Byrappa** delivering lecture to the participants of International school of Crystal Growth at ICTP in Trieste April 2001.



**Prof.K. Byrappa** receiving Materials Research Society of India Medal from Dr..R. Mashelkar, Director General, CSIR, India, during 2005, in Pune.