

## Journal of Physics Research and Applications

---

**From:** Dr.R.K. KOTNALA <rkkotnala@gmail.com>  
**Sent:** Sunday, August 27, 2017 1:07 AM  
**To:** physicsres@journalsoa.org  
**Subject:** Re: Invitation to join our Editorial Board

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

**Dr. R. K. Kotnala** *FNAsc,FIGU*; **Chief Scientist;**  
**Fellow - National Academy of Sciences, Fellow IGU**  
**Outstanding Academician -APAM, Asia Pacific Academy of Materials**  
**Associate Editor, J. Appl Physics (American Institute of Physics) U.S.A.**  
**Associate Editor, IET Science, Measurement & Technology:**  
**(Institutions of Engineering and Technology) , London, U.K.,**

**Head, Environmental Sciences and Biomedical Metrology Division**  
**Distinguished Professor AU.**  
**Professor, Academy of Scientific & Innovative Research (AcSIR)**  
**CSIR - National Physical Laboratory, New Delhi - 110 012,**  
**Fax - +91-11-45609310, Ph- 011-45608599/ 8266/ 8599**  
Dr Kotnala web site : <http://drkkotnala.com>  
**,M 09811237051**

Dear Dr.Rana,

I am highly thankful to you for inviting me as Editorial Board member but I request you to get me a exclusive key slot as per my scientific credentials & diversified enrich experience, I shall be happy to join that position in your journal.

Although I have appended below my brief biodata for your reference.

I have published papers in PRL, PRB, APL, Angewantde Chemie International journals also.

**Brief About Dr. Kotnala:**

**R K Kotnala, Outstanding Academician, APAM, Asia Pacific Academy of Materials, IGU & Fellow, National Academy of Sciences, India.**

**Dr.R.K.Kotnala, Chief Scientist ( Scientist for last 35 years ) & Head Materials Physics & Engineering Division , National Physical Laboratory, New Delhi; obtained Ph.D in Solar Cell from IIT Delhi 1982. Specialisation : ISO : 17025 standards, Nano Magnetic Material, Superconductivity , Spintronic Device Physics, Solar Cell , Sensors, Hydroelectric Cell.**

**Technical/professional engineering accomplishments and brief reflection of scientific excellence :**

**Hydroelectric Cell Invention :**

Interestingly Dr Kotnala & Dr Shah have invented new principle of water dissociation & a new device to generate electricity !

Hydroelectric cell invention, a ground breaking revolution, has initiated a paradigm shift in Green Energy research and opened a new field of research globally. It supports carbon sequestration mechanism to mitigate environmental pollution also.

Hydroelectric Cell Invention is a boon for masses & certainly it is an onset of a Green Energy Revolution! Covered in 85 News nationally & international.

Pioneering work on ethical issues of Nanotechnology/Nanoscience for scientific community as well. Some of contributions follow as:

**Recognition as Physicist/Materials Scientist Globally :**

Published **372** research papers in prestigious international

journals , **703** citations only in last 7 months besides **9** US/ Indian patents.

+ **9** industrial consultancies & support to **112** industries + > **310** invited

**talks** + **4** books and has interacted with numerous industries based on ISO:17025. + Interaction with **17** Universities & **6** IITs.

[Published papers in : Angewantde Chemie, Physical Review Letters, Physical Review B, J. Materials Chemistry, Nanoscale, J.Physical Chemistry C, Sensors & Actuators Chem B, Scripta Materials, Appl. Phys. Lett, J. Appl. Phys, RSC Advances, J.Alloys & Compounds. ]

\* **A Handbook on Magnetic Materials, Vol. 23,2015 has been published by Elsevier North-Holland Largest scientific publisher of US wherein I have contributed a chapter of 91 pages on: FERRITES : Nano-Materials to Spintronics** ( Edited by K H J Buschow ).

\* **Office of Naval Research (ONR), Washington, USA** had entrusted in my work on multiferroics for development of electromagnetic sensor with Italy group and awarded 0.105 million \$ US as a contract project in 2011.

\* Associate Editor experience of 40 months in J.Applied Physics, AIP, NewYork. USA .

### International Session Chairman / Talks ;

1.International Advisory Committee Member for EMN Croatia Meeting Energy Materials Technology at Dubrovnik, Croatia, May 4-7, 2016.

2.Keynote Speech in World Congress on Smart Materials WCSM 2016 ( to be delivered in March 2016 ) Singapore.

3. **A Special Invited Talk at Naval Research Laboratory , Washington , May 29,2015.**

4. Chairman Program Committee. Global Conference on Materials Science and Engineering (CMSE 2013) to was held in Shanghai, University of Science and Technology in China, during Nov,2013.

**5. Member, Technical Committee in Asia Pacific Metrology Programme Meeting Nov. 2012 in**

**New Zealand.**

6. Technical Programme Member & Session Chairman in International Conference CPEM 2010, S. Korea.

7. Invited talk on Barium Ferrite Thin Film for Magnetic Memory : 2011 Moscow University.

8. Invited talk on Multiferroics & its Future Prospects: Catania Univ.2010 Italy.

9. Invited talk on Atomic Level Coupling of Magnetic & Electric Dipoles, Materials Research Centre, Darmstadt, 2009 Germany.

**National Recognitions:**

1. Guided & Worked for creation of new department of Advanced Materials & Nanoscience in different 5 Universities.

2. CSIR-Research initiatives on Nano Sensors & Devices Project Coordinator from 2012.

3. Disseminating more awareness of Ethics in Science, Secretary of SSV, Society for scientific Values, for last 7 years.

4. Recipient of MRSI Medal Award 2008 in Material Science (Magnetic Materials).

**5. Chairman, committee on Magnetic Materials of Materials Research Society of India (MRSI), Bangalore since 2012. Currently**

**6. Secretary, Society for Scientific Values.**

**7. Vice President, Magnetic Society of India since 2008, and**

**8. Committee Member, National Mission on Strategic Knowledge for Climate Change due to National Mission Projects - National Solar Mission, Enhanced Energy Efficiency & Clean Coal Technology by Deptt. of Science & Technology, DST ( 2013 Continued ).**

**9. Governing Council Member, Electronics & Quality Development Centre (Min. of IT & Communication), Gandhi Nagar and Vadodara ( 2008 - 14).**

**10. Court of University, D.C.R. Univ. Sci. & Tech. Murthal, ( 2008-14)**

**11. Chairman, committee on Magnetic Materials of Materials Research Society of India (MRSI), Bangalore.**

**12. University Grant Commission, UGC, nominee in the Governing Council of G.Pulla Reddy Engineering College (Autonomous) KURNOOL - 518 002, A.P**

**13. Chairman/expert member of different national level committees of DST, CSIR, DRDO, Solar Energy Centre, JNU, IITs, Universities & UPSC.**

**14.. Besides academics Dr. Kotnala is a member of Academic Council, BoS of Universities and Court of University/ Governing Council of Technical Universities/Colleges/Institutions. **Chaired sessions in international** & national Conferences.**

### **Science for Society:**

**1. *Planned & Guided Protection of Human Health & Environment from Microwave Radiation . EMI/EMC Test Facility in EQDC, Gandhi Nagar Gujarat, for environmental protection of human health from EMI & magnetic radiation emission test from electronic equipments & automobiles.***

2. Disseminating *more awareness of Ethics in Science*, Secretary of SSV, Society for scientific Values, for last 7 years.

3. *Circumvented the Menace of Electrical Energy Theft: Magnetic tempering proof energy meters were developed with new technical specifications.*

## **Dr.R.K.Kotnala,s Significant Scientific Contributions :**

### **I. Sensor & Hydroelectric Cell:**

A highly humidity sensitive oxygen deficient mesoporous magnesium ferrite has been developed and its conduction mechanism by humidity has been established experimentally & theoretically through isosteric heat of adsorption, binding energy of water molecules estimation *Sensors & Actuators B* 171 2012 & 129 2008. Out of this work a prototype humidity sensor at low cost has been developed. A US patent US 20150061706 A1.

Based on it *Green Energy Cell* has been innovated to yield 78 mW power using water only. *Lithium- Substituted Magnesium Ferrite as Hydroelectric Cell and Processing Method thereof* by R.K.Kotnala. & Jyoti Shah. Provisional # 792/del/2015

### **II. Nanoscience & Nanotechnology :**

1. **Nano Rotor** : For the first time ferromagnetic three dimensional freestanding pillar architecture of multiwall carbon nano tubes has been synthesized and experimentally supported it to act as Nano mechanical rotor and drug delivery carrier. *Angewandte Chemie*, 51 2012.

2. **Nano Oscillator** : Based on Spin Hall Effect of Co/Pt bilayer thin film magnetically anisotropic has been fabricated by PLD to understand spin pumping of polarized electrons. Finally, bilayer has been developed into Nano oscillator to generate higher frequencies.

3. **Nanotechnology for EMI Shielding**: For the first time improved electromagnetic interference shielding response was established in Poly(aniline)-coated fabrics by substituting dielectric and magnetic Nanoparticles of BaTiO<sub>3</sub> (15 nm) or Fe<sub>3</sub>O<sub>4</sub> (40 nm) within coated poly(aniline)(PANI) matrix. The high value of absorption-dominated SET (97 % attenuation) and

specific shielding effectiveness value of 18 dB cm<sup>3</sup>/g demonstrated.

**4 .Nanomagnetism: Nano Ferrites-** Lithium ferrite, Bismuth ferrite, Barium ferrite etc have been designed & developed for microwave applications. Fe-doped PbTiO<sub>3</sub> nanoparticles have been synthesized by chemical route using polyvinyl alcohol as a surfactant. The role of surfactant & nanosize has been analyzed to explain enhancement of magnetization value of Fe doped nanoparticles of lead titanate to 41.6 x 10<sup>-3</sup> emu/g.

### **III. Spintronic Device Materials:**

#### **Multiferroic & Diluted Magnetic Semiconductor**

**1: In multiferroics atomic level evidence** for magnetic and dielectric dipoles coupling has been confirmed experimentally in composite material. **Physical Review Letters.101, 2008**

**2. A new multiferroic material Cr-doped BaTiO<sub>3</sub>** was synthesized by facile method of metal organic decomposition. Wherein **structural phase transformation from tetragonal to distorted cubic phase** was achieved due to doping to induce magneto electric coupling at atomic level.. Similar results have been obtained in Fe doped BaTiO<sub>3</sub>, GdFeO<sub>3</sub> and composite thin films.

**3: Room temperature ferromagnetism in ZnO Nanorods:** In recent work of stringently controlled experimentation on nanorods of ZnO doped by Li has resulted in room temperature ferromagnetism which has been unequivocally supported with formation of magnetic domains by MFM & other measurements. A comprehensive theory has been formulated based on correlated model for oxygen orbital with random potentials introduced by Li atoms which ultimately inducing local magnetic moments on oxygen atoms **Physical Rev. B, 79, 2009.**

### **IV. High Temperature Superconductivity :**

Developed a Chemical co-precipitation method to prepare one Kg batch of Yttrium Barium Copper oxide high temperature superconductor.

## V. Solar Cell:

**Solar Cell Fabrication Process:** A process of fabrication of P<sup>+</sup>NN<sup>+</sup> silicon solar cells by simultaneous diffusion of boron and phosphorous into N-type silicon through a thermally grown silicon dioxide layer of 0.1 micron thick was main Ph.D. work of Dr. Kotnala. The process is well suited for large scale production of back surface field silicon solar cell. Moreover this work was published in "ASSET" United National University publication as-Low Cost Process - Solar Cell in 1981.

## VI. Two New Laboratories Created :

Established two Labs in 1995-98 & 1999-2001 at international level : A laboratory for primary standards for 10 magnetic measurements parameters in the preview of ISO:17025 for International Bureau of Weights & Measure, (BIPM) France. With a capability of magnetic measurements in 10  $\mu$ T to 1.5 T with an uncertainty of  $10^{-4}$ . Electrical energy meter technical specifications have been redefined by carrying out extensive experimentation to do away tampering of energy meters by external magnetic field by providing an inexpensive magnetic shielding in meters-a social benefit to common man!

Also established a state-of-art R&D lab, on "Multiferroic & Magnetics Materials" at NPL.

# R K Kotnala

Dear Dr. R. K. Kotnala ,

Greetings from SciTechnol.

I hope this email finds you in good health.

We have contacted you via email regarding Editorial Board Member Invitation, since we didn't get any response, on behalf of SciTechnol we are resending the Invitation, as we are aware of your busy schedule and



commitments in other activities or our message may not have successfully reached you.

We are pleased to introduce- Journal of [Physics Research and Applications](#), a newly launched Open Access Journal of SciTechnol.

**Journal of Physics Research and Applications** is a peer-reviewed multidisciplinary journal that highlights large contributions and breakthroughs on advancing Physics Sciences and allied fields.

We are now in the process of forming Editorial Board of the Journal and based on your Research expertise and scientific achievements, it is our utmost pleasure to invite you as an active **Editorial Board Member** of our Journal. The journal is always in search of dedicated people who can spread knowledge.

I have explored your profile and am enlightened of your reputation and distinction in the field of research relating to our journal.

If you are interest to serve on the Journals' Editorial Board, kindly provide us your updated CV, short biography and photograph with a mail of consent as the details of each editor will be shown online in Editorial Board page of the Journal.

We sincerely hope that you will accept our invitation to join the Editorial Board.

*With your collaboration, we will make an impact in the scientific community of physics with its publications.*

We will be looking forward to hearing from you and assure you of our best collaboration always.

Please feel free to contact us for any queries, concerns or comments.

Awaiting to work with you.

Thank you.

Regards,

Rana D

Journal Coordinator | Journal of Physics Research and Applications

E-mail: [physicsres@journalsoa.org](mailto:physicsres@journalsoa.org)

[www.scitechnol.com](http://www.scitechnol.com)

Direct: +1-702-714-70001(9034)

Customer Service: +1-702-508-2676