

**Name** : **Dr. Jacob George**  
Age & Date of Birth : 25-5-1958, 51 yrs  
Religion & Denomination : Christian, Mar Thoma  
Designation : Principal  
Home Address : Payattukalayil House  
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Teaching experience : 29Years (14 years at P. G. level)  
Department of Physics,  
Christian College, Chengannur

Research experience : 11 Years in Condensed Matter Physics Crystal  
Growth and Pattern Formation studies

Administrative experience : Principal w. e. f. June 2007

### **Educational qualifications**

SSLC from St. Johns High School, Eraviperoor in 1973 March

Pre-Degree from Mar Thoma College, Tiruvalla in 1975 March

B.Sc. (Physics) from Mar Thoma College, Tiruvalla in 1978 March

M.Sc. (Physics) from S.B. College, Changanacherry in 1980 March securing First Rank from the University of Kerala.

M. Phil. (Physics) from Department of Physics, University of Kerala in 1985 September

Ph.D. (Physics) from Mahatma Gandhi University in 2007 January

### **Academic Distinctions and Awards**

Passed M Sc Degree securing First Rank from the University of Kerala in 1980 and winner of Gold Medal

Awarded University Merit Scholarship for Post-graduation

Awarded The Rev. Dr. Mathew Pothen Thekkekkara Award for the best student of M.Sc. Class of S. B. College, Changanacherry during 1978-1979 and 1979-1980.

Awarded Sri. P. K. Augustine Kavalam Gold Medal for having secured the highest rank in the M.Sc. Degree Examination of April 1980 by S. B. College, Changanacherry.

Won the Proficiency prize in Physics during 1977-1978 for B.Sc. Degree from Mar Thoma College, Tiruvalla.

### **Research Details of Doctoral Study**

Name of the University : Mahatma Gandhi University, Kottayam

Subject and Field of Study : *'Kinetics of Periodic Precipitation Patterns in Reaction Diffusion Systems'*  
(Condensed Matter Physics in Physics Faculty)

### **Research Papers Published in accredited journals**

Formation of periodic precipitation patterns: A moving boundary problem, Chemical Physics Letters, Elsevier Science, (Netherlands), vol. 362, p. 8-12, (2002).

Liesegang patterns: Estimation of diffusion coefficient and a plausible justification for colloid explanation, Colloid and Polymer Science, Springer -Verlag (Germany), vol. 280, p. 1131-1136, (2002).

Rhythmic pattern formations in gels and Matalon-Packter law: A fresh perspective, Pramana- Journal of Physics, Indian Academy of Sciences, (India), vol. 60, p. 1259-1271, (2003).

Micro hardness studies of pure and doped brushite crystals, Indian Journal of Physics A, Indian Association for the Cultivation of Sciences, (India), vol. 77, p. 37-40, (2003).

Pattern formation in reaction diffusion systems: A moving boundary model, Solid State Phenomena, Trans Tech Publications, (Switzerland), vol. 97-98, p.125-132, (2004).

Role of colloid dynamics in the formation of Liesegang rings in multi-component systems Journal of Materials Science, Kluwer Academic Publishers, (London), vol. 39, p. 311-313, (2004).

Crystallization and structural properties of calcium malonate, Journal of Materials Science, Kluwer Academic Publishers, (London), vol. 39, p. 6325-6331, (2004).

Intermediate colloidal formation and varying width of periodic precipitation bands in reaction-diffusion systems, a moving boundary problem, Journal of Colloid and Interface Science, Elsevier Science, (Netherlands), vol. 282, p. 397-402, (2005).

A novel three-dimensional polymeric structure of crystalline neodymium malonate hydrate, Materials Letters, Elsevier Science, (Netherlands), vol. 59, p. 1206-1213, (2005).

Migrating triplet precipitation bands of calcium phosphates in gelatinous matrix, Journal of Materials Science Letters, Springer Science, (U.S.A.), p. 5557-5559, (2005).

On the crystallization kinetics and micro-structural transformations of  $\text{Fe}_{40}\text{Ni}_{38}\text{B}_{18}\text{Mo}_4$  alloys, Journal of Materials Science, Kluwer Academic Publishers, (London), (in press)

### **Other Publications**

*'Pattern formation in reaction diffusion systems'*, S. B. Academic Review- Journal of Interdisciplinary Studies and Research, St. Berchmans' College, Changanacherry, vol. XI, January-June p. 81-93, (2003).

*'Width law for rhythmic patterns in gels'*, S. B. Academic Review- Journal of Interdisciplinary Studies and Research, St. Berchmans' College, Changanacherry, vol. XI, July- December, p. 81-93, (2003).

### **Papers presented in National / International Conferences and published in Proceedings**

*'Formation of periodic precipitation patterns: a moving boundary problem'*, 32<sup>nd</sup> National Seminar on Crystallography, University of Jammu, Jammu Tawi, October 24-26, 2002.

*'Rhythmic precipitation pattern formation: A moving boundary model'*, International School on Crystal Growth of Technologically Important Electronic Materials, University of Mysore, Mysore, January 20-28, 2003, Allied Publishers Pvt. Limited (New Delhi), 2003, p. 214-223.

*'Precipitation patterning in reaction diffusion systems'*, 9<sup>th</sup> National Seminar on Crystal Growth, Crystal Growth Centre, Anna University, Chennai, February 24-26, 2003.

*'Periodic precipitation during crystallization in gel column, an explanation using colloid dynamics'*, 9<sup>th</sup> National Seminar on Crystal Growth, Crystal Growth Centre, Anna University, Chennai, February 24-26, 2003.

*'Precipitation patterning in reaction diffusion systems'*, 6<sup>th</sup> International Conference on Self-formation Theory and Applications, Vilnius, Lithuania, November 26-28, 2003, Trans Tech Publications (Institute of Lithuanian Scientific Society), 2004, p.125-132.

*'Spatio temporal patterns in gelatinous matrix'*, 16<sup>th</sup> Kerala Science Congress, Kozhikode, January 29-31, 2004, Proceedings, p.33-39.

*'Multiple phases of calcium phosphates in silica gel matrix'*, National Conference on Current Trends in Materials Science, Charal Mount, Kuriannur, Kerala, March 25-27, 2007, CTMS Proceedings, p.118-123.

### **Research Assignments**

Subject Referee to the Journal Langmuir (Published by the American Chemical Society, The Institute of Scientific and Industrial Research, Osaka University, Mihogaoka 8-1, Ibaraki, Osaka 567-0047)

Subject Referee to the Journal Chemical Physics Letters(Published by Elsevier Science, 1000 AC Amsterdam, The Netherlands)

Subject Referee to the Journal Chemical Physics(Published by Elsevier Science, 1000 CT Amsterdam, The Netherlands)

### **Work Shops/ Seminars organized**

Convener of National Conference on Current Trends in Materials Science (CTMS 07) held at Charal Mount, Kuriannur during March 25-27, 2007. The Conference was jointly sponsored by UGC and KSCSTE. The proceedings' of the conference containing 81 research papers was also published.

### **Research Projects**

Completed : Carried out a major research project entitled 'Growth and Morphological Studies of Metal, Alloy and Compound crystals in Gels' aided by the Kerala State Council for Science, Technology and Environment, Government of Kerala as Investigator along with Dr. M. T. George who was the Principal Investigator. Project Period & amount: 1993-1996, Rs. 75,000/-

Ongoing: Minor research project entitled 'Fabrication of Magneto-impedance based Sensors' aided by the U.G.C. is being carried out as Co-investigator along with Mr. Hysen Thomas who is the Principal Investigator. Project Period & amount: 2007-2008., Rs.80, 000/-

Minor research project entitled 'Rhythmic Precipitation Patterns in Diffusion Controlled Systems' aided by the U.G.C. is being carried out as Principal Investigator. Project Period & amount: 2007-2008, Rs.65,000/-

### **Refresher Courses attended**

Refresher course on "Condensed Matter Physics" sponsored by the UGC, held at Cochin\_University of Science & Technology from 28-02-1994 to 28-02-1994.

Refresher course on Physics sponsored by the UGC, held at St. Berchmans College, Changanacherry, by the Mahatma Gandhi University from 06-01-1997 to 31-01-1997.

### **University Assignments**

Chief Examiner for B.Sc. (Physics) Degree Examinations of Kerala University from 2001 onwards and Additional Examiner for different B.Sc. degree Examinations from 1988 onwards.

Member, M.Sc. (Previous) and M.Sc. (Final) Physics Examination Board of the University of Kerala from 1998 onwards.

Member, M.Sc. (Previous) and M.Sc. (Final) Physics Examination Board of the Mahatma Gandhi University as an External Examiner from 2003 onwards.

### **Organizational and Administrative experience**

Member, College Staff Council, Christian College, Chengannur (2006- 2007)

Chairman, College Staff Council, Christian College, Chengannur (2007- till date)

Chairman, Internal Quality Assurance Cell (IQAC), Christian College, Chengannur (2007- till date)

Governing Council Member, Titus II Teachers Training College, Tiruvalla (1990-1996)

Member, Teacher Selection Committee, Titus II Teachers Training College, Tiruvalla (1993-1996)

Governing Council Member, Mar Thoma College, Tiruvalla (2002-2005, 2008-continuing)

Governing Council Member, St. Thomas College, Kozhencherry (2007-2008)

Member, Service Commission for Schools, MT & EA Corporate Management having 6 higher secondary schools, 10 High Schools and 114 Lower Primary Schools. (1990-1996)

Member, Nicholson Higher Secondary School Board (1996-1999, 2008-continuing)

Member, Higher Education Commission, Mar Thoma Church (2007- till date)

Member, Mar Thoma Church Educational Society, Thiruvananthapuram that runs the Mar Thoma Residential Schools at Mukkolakkal, Thiruvananthapuram (2005-till date)

### **Involvement in Student Activities**

I B.Sc. Representative, College Union, Mar Thoma College, Tiruvalla (1975-1976)

Secretary, Physics Association, Mar Thoma College, Tiruvalla (1977-1978)

I PG Representative, College Union, S. B. College, Changanacherry (1978-1979)

Chairman, College Union, S. B. College, Changanacherry (1979-1980)

### **Involvement in Social Activities**

Member Block Development Committee (BDC), Mallappally (1987-1991)

Chairman, Standing Committee, Planning & Finance, Mallappally Block Panchayat (1995-1999)

President, Mallappally Block Panchayat (1999-2000)

President, Mallappally Service Co-operative Bank (Class I Bank having six branches), Keezhvaipur (1986-2001, 2003-till date)

Member, Taluk Sabha, Mallappally Taluk (1995-1999)

Vice Chairman, Taluk Sabha, Mallappally Taluk (1999-2000)

Vice Chairman, Karshika Vikasana Samithy, Mallappally Panchayat (1985-2000)

Member, Water Authority Advisory Committee, Mallappally Taluk (1997-2000)

President, Nellulpadhaka Samithy, Keezhvaipur Padasekharam (1996-2001)

Member, Block level Expert Committee (BLEC), Peoples Planning Programme (1997-2000)

Secretary, 'Asraya' Old Home, Mallappally (2002- continuing till date)

### **Church Activities**

Lay Trustee & Treasurer, Mar Thoma Church (August 2005 to September 2008)

Executive Committee Member, Kerala Council of Churches (KCC) (1992-1995)

General Council Member, National Council of Churches in India (NCCI) (1995-1998)

Executive Committee Member, Communion of Churches in India (CCI) (A joint Council of Mar Thoma Church, C.S.I and C.N.I) (2005-2008)

Member, Episcopal Nomination Board (2004 ,2010)