

National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members

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**Curriculum Vitae**

**V. Kumaran**

**Associate Professor, Department of Mathematics**



1. Name: V. Kumaran
2. Designation: Associate Professor
3. Office Address: Department of Mathematics,  
NIT, Tiruchirappalli-620015.
4. Telephone (Office): 0431-2503670
5. Email (Primary): kumaran@nitt.edu
6. Field(s) of Specialization: Fluid Mechanics,  
Operations Research

7. Employment Profile

Job Title	Employer	From	To
Lecturer in Maths Dept.	Dr.M.G.R. Engineering College, Madras	16.11.92	31.12.93
CSIR-RA in Maths dept.	Anna University, Madras	1.2.94	15.9.94
Faculty Member (M & CA Dept.)	REC, Tiruchirappalli	16.9.94	17.12.96
Lecturer (M & CA Dept.)	REC, Tiruchirappalli	18.12.96	17.12. 2K
Senior Lecturer (Maths. Dept)	NIT, Tiruchirappalli	18.12.2K	30.6.2006
CAS –Assi. Prof. in Maths. Dept.	NIT, Tiruchirappalli	1.7.2006	5.11.2008
Assi. Prof. in Maths. Dept.	NIT, Tiruchirappalli	6.11.2008	30.6.2009
Associate Prof. in Maths. Dept.	NIT, Tiruchirappalli	1.7.2009	Till Date

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Anna university	1992	-	Fluid Mechanics
M.Phil.	Anna University	1989	I Class-79%	Mathematics
M.Sc.	Anna University	1986	I Class-85%	Appl. Maths.
B.Sc.	Madras University	1984	I Class-69%	Mathematics

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H.Sc.	Tamilnadu State Board	1981	I Class-69%	MPC
S.S.L.C.	Tamilnadu State Board	1979	I Class-75%	-

### 9. Academic/Administrative Responsibilities within the University

- *Associate NCC Officer*, NIT, Tiruchy during July 1997 – Feb. 2009.
- *Associate Dean (R & C)* during Jan. 2010 – 14<sup>th</sup> Sept. 2010
- *Coordinator* for UG I year Mathematics courses
- *Staff advisor* for a NITT-Fest
- *Security Committee Member* for many NIT-T programmes as NCC officer.

### 10. Academic/Administrative Responsibilities outside the University: -

### 11. Awards, Associateships etc.

- University 1st Rank in Post-Graduation
- Dr. Narasinga Rao's Prize for the best student in Operations Research Group in M.Sc.
- Qualified in Screening Test for Lecturer in Maths by Madras University in 1990
- Obtained CSIR Research Associateship in 1994
- 'Exceptional' grading in the NCC Air wing senior division pre-commissioning course held at Airforce Admin. College, Coimbatore, during Jun. 8 - Aug. 29, 1998 and got commissioned as 'Pilot Officer'
- 'First in order of merit' in the NCC Air wing senior division refresher course held at Airforce Admin. College, Coimbatore, during 11th Dec. 2000 - 6<sup>th</sup> Jan. 2001 and got promoted as 'Flying Officer' from 29<sup>th</sup> Aug.2001.

### 12. Fellowships

- Qualified in National Educational Test for JRF Conducted by UGC in Aug. 1986
- Qualified in National Educational Test for JRF Conducted by CSIR in Nov. 1986.

### 13. Details of Academic Work

#### (i) Curriculum Development

Involved in syllabi revision of Mathematics courses.

#### (ii) Courses taught at Postgraduate and Undergraduate levels

- 1994-2005: around 50 courses (3 UG + 2 PG each year) – No feedback score
- 2006-'09: around 15 courses (15 UG) - Feedback score: Mean – 8+, S.D. - 0.7+
- 2010-2011: around 7 subjects (3 ½ UG each year) – No feedback score
- 2011-2015: around 12 courses (UG) – Feedback Score: Mean 8+, S.D.-0.7+

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(iii) Projects guided at Postgraduate level: around 10 M.Sc. Projects during 1996-2005

(iv) Other contribution(s)

Papers Reviewed for the International Journals;

- *International Journal of Heat Mass Transfer* (Elsevier, SCI)
- *Heat Mass Transfer* (Springer, SCI)
- *Boundary Value Problems* (Springer/Hindawi, open access)
- *Chemical Engineering Communications* (Taylor & Francis, SCI)
- *International Journal of Thermal Sciences* (Elsevier, SCI Expanded)
- *Journal of Applied Mathematics* (Hindawi, SCI Expanded, open access)
- *Journal of Applied Mathematics and Computing* (Springer)
- *Zeitschrift für Naturforschung A – Physical Sciences* (VZN publisher, Germany)
- *Int. Journal of Computer Mathematics* (Taylor & Francis, SCI Expanded)
- *International Journal of Energy & Technology*
- *Commun. in Nonlinear Sci. Numer. Simulation* (Elsevier, SCI Expanded)
- *Brazilian J. of Chemical Engg.* (Braz. Soc. Chem. Engg, SCI Expanded)
- *Bulletin of Malaysian Mathematical Sciences*, Malaysia.

14. Details of Major R&D Projects – Nil-

15. Number of PhDs guided: 04

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
K. Senthil Kumar	A study on risk in traffic flow and effective safety management	Supervisor	2008
A. Anne Rosaline	A study on safety measures of road traffic accidents in Tamilnadu	Supervisor	2012
A. Vanav Kumar	Unsteady boundary layer flow past a stretching sheet	Supervisor	2011
R. Tamizharasi	An approximate analytic technique for solving a class of nonlinear boundary problems and its applications	Supervisor	2012

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16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

- Presented 4 papers in the 3<sup>rd</sup> conference on nonlinear science and complexity, Cankaya University, Ankara, Turkey, 28 – 31 July 2010.
- International Workshop on ‘Wave Dynamics and Stability of Thin Film flow Systems’, IIT, Chennai, September 1-4, 2006.
- Presented the paper ‘Approximate analytical solutions of stagnation point flows in a porous medium’ and Co-Chaired a session in the Conference on Non-linear Science and Complexity, Beijing, China, Aug. 7-12, 2006.
- International Workshop on ‘Mathematics and Physics of Complex and Nonlinear Systems’, IIT, Kanpur, March 14 – 27, 2004.
- Presented the paper ‘Generalised inverse and its application’, Regional Workshop on Analysis, Thivanai Ammal College for Women, Villupuram, 30 -31 Jan. 2004.
- Presented the paper ‘Bounds on probability of a finite union’ – International conference on Operations Research, Indian Statistical Institute, Kolkata, 8-10 Jan. 2004.
- AICTE-ISTE short term training programme on ‘Advanced Mathematical Methods in Engineering & Science’, Visvesvaraya National Institute of Technology, Nagpur, Nov.11 – 23, 2002.
- NCC Air wing senior division refresher course held at Airforce Administrative College, Coimbatore, 11<sup>th</sup> Dec. 2000 - 6<sup>th</sup> Jan. 2001.
- NCC Air wing senior division pre-commissioning course held at Air force Admin. College, Coimbatore, during Jun. 8 - Aug. 29, 1998 and got commissioned as ‘Pilot Officer’.
- Winter course on ‘Complementarity and Game theory’, Indian Statistical Institute, New Delhi, 15 –27 Dec. 1997.
- International Workshop on " Role of fluid mechanics on materials manufacturing and processing", UGC-DSA Centre for Fluid Mechanics, Bangalore University, 1–3 Jan. 1996.
- Seminar on ‘Math. Modelling’, St. Joseph’s College, Tiruchy, 30 – 31 Jan.1997.
- ISTE Winter School on ‘Performance appraisal and development system’, Regional Engineering College, Tiruchy, 20-25 Jan. 1997.
- Presented the paper ‘Effect of axial heat conduction in flow past a stretching sheet’ - 35th ISTAM CONGRESS, Anna University, Madras, 19-22 Dec. 1990.
- Presented the paper ‘Free convection near an impulsively started and heated / cooled vertical plate with temperature dependent heat sink’ - NAT. SEMINAR ON COMP. TECHNIQUES IN CONTINUUM MECH., Anna University, Madras, 29-31 Jan. 1990.
- Presented the paper ‘Pulsatile flow and heat transfer in a porous channel of porous medium’ - 4th ANN. CONF. OF THE RAMANUJAN MATH. SOC., Alagappa University, Karaikudi, India, 20-22, May 1989.
- Presented the paper ‘Effect of cross flow on oscillatory flow in a porous medium between two parallel plates in relative motion’ - Ind. Sci. Congress, M.K.U., Madurai, India, 7-12 Jan 1989.

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- Presented the paper ‘Generalization of Stokes first problem to immiscible fluid layers’ - *54th ANN. CONF. OF THE IND. MATH. SOC., University of Poona, India, 27-30 Dec. 1988.*
- Presented the paper ‘Heat transfer in Stokes first problem’ - *33rd ISTAM CONGRESS, Banaras Hindu University, Varanasi, India, 19-22 Dec. 1988.*
- Presented the paper ‘Oscillatory flow of a viscous fluid over a porous bed with suction at the bottom’ - *4th ANN. CONF. OF THE MATH. SOC., B.H.U., Varanasi, India, 16-17 Dec. 1988.*
- Presented the paper ‘Steady slow laminar flow in a convergent or divergent channel with suction at one wall and injection at the other wall’ - *2nd CONGRESS OF THE A. P. SOC. for MATH. SCI., S.K. University, Anantapur, India, 13-14, Nov. 1988.*
- Presented the paper ‘Solving a mixed B.V.P. & Diffusion problem - Random walk approach’ - *32nd ISTAM CONGRESS, IIT, Bombay, 17-20 Dec. 1987.*

### 17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

- Presented 4 papers and organized a session in the *3<sup>rd</sup> conference on nonlinear science and complexity*, Cankaya University, Ankara, Turkey, 28 – 31 July 2010.
- Presented the paper ‘Approximate analytical solutions of stagnation point flows in a porous medium’ and *Co-Chaired a session* in the *Conference on Non-linear Science and Complexity*, Beijing, China, Aug. 7-12, 2006.

### 18. Invited Talks delivered

- Delivered an *Invited Talk* on ‘Flow through Porous Media’ and *Chaired a session* in the *National Seminar on Applied Mathematics* held at Annamalai University, Chidambaram on 07.03.2008.
- Delivered an *Invited Talk* on ‘Advances in Boundary Layer Theory’ and *Chaired a session* in the *National Seminar on Recent Trends in Applied Mathematics* held at PSGR Krishnammal College for Woman, Coimbatore on 12.03.2007.

### 19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member )	Organization	Membership No. with date
Life Member	ISTAM	L/212
Life Member	ISTE	LM 23244

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### 20. Academic Foreign Visits

Country	Duration of Visit	Programme
Beijing, China	06-13, Aug. 2006	Paper presentation in conference
University of Leeds, UK	03-27, July 2007	Joint research with Prof. J. H. Merkin
Ankara, Turkey	28-31, July 2010	Paper Presentation/ symposium organized in conference

### 21. Publications

#### (A) Refereed Research Journals:

##### (i) Papers published in SCI journals: (11 papers)

- J.H. Merkin (UK) and V. Kumaran, The unsteady heat transfer due to a heat source in an MHD stretching sheet flow, *Meccanica*, Vol. 47, No. 8, 2012, Pages 1837-1847 (SCI, 2015 Impact factor: 1.558)
- V. Kumaran, R. Tamizharasi, J. H. Merkin (UK) and K. Vajravelu (USA), On thin film flow of a third-grade fluid down an inclined plane, *Arch. Appl. Mech.*, Vol. 82, No. 2, 2012, Pages 261-266 (SCI, 2015 Impact factor: 1.828).
- V. Kumaran and R. Tamizharasi, Brinkman Flow Past a Stretching Sheet, *Transport in Porous Media*, Vol. 87, No. 2, 2011, Pages 541-560 (SCI, 2015 IF: 1.653)
- V. Kumaran, A. Vanav Kumar and I. Pop (Romania), Transition of boundary layer flow past a stretching sheet due to a step change in applied constant mass flux, *Acta Mechanica*, Vol. 216, No's. 1-4, 2011, Pages 139-145 (SCI, 2015 IF: 1.694)
- J.H. Merkin (UK) and V. Kumaran, Unsteady MHD boundary-layer flow on a shrinking sheet, *Euro. J. Mech. - B/Fluids*, Vol. 29, No. 5, 2010, Pages 357-363 (SCI, 2015 IF: 1.418).
- H.I. Andersson (Norway) and V. Kumaran, On sheet-driven motion of power-law fluids, *Int. J. Non-Linear Mechanics*, Vol. 41, No. 10, 2006, Pages 1228-1234 (SCI, 2015 IF: 1.920).
- V. Kumaran and I. Pop (Romania), Steady free convection boundary layer over a vertical flat plate embedded in a porous medium filled with water at 4 °C, *Int. J. Heat Mass Transfer*, Vol. 49, No's. 17-18, 2006, Pages 3240-3252 (SCI, 2015 IF: 2.857).
- V. Kumaran, Erratum in 'MHD flow past a stretching sheet by T.Y. Na and I.Pop - Acta Mechanica - Vol. 116 , Pages 235-238 , 1996' Vol.121, No's 1-4, 1997, Page 237 (SCI, 2015 Impact factor: 1.694).
- V. Kumaran and G. Ramanaiah, A note on flow over a stretching sheet, *Acta Mechanica*, Vol.116, 1996, Pages 229-233(SCI, 2015 Impact factor: 1.694).
- G. Ramanaiah and V. Kumaran, Natural convection about a permeable cone and a cylinder subjected to a radiation boundary condition, *Int. J. Engg. Sci.*, Vol.30, 1992, Pages 693-699 (SCI, 2015 Impact factor: 3.165).
- V. Kumaran and G. Ramanaiah, Effect of cross flow on oscillatory flow in a porous medium between two parallel plates in relative motion, *ASME Trans. J. Fluids Engg.*, Vol.113, 1991, Pages 151-154 (SCI, 2015 Impact factor: 1.442(5 year)).

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### (ii) Papers published in SCI Expanded journals: (09 papers)

- R. Tamizharasi and V. Kumaran, Pressure in MHD/Brinkman flow past a stretching sheet, *Commun. Nonlin. Sci. Numer. Simulat.*, Vol. 16, No. 12, Dec. 2011, Pages 4671-4681 (SCI Expanded, 2015 Impact factor: 2.834)
- V. Kumaran and I. Pop (Romania), Nearly parallel Blasius flow with slip, *Commun. Nonlin. Sci. Numer. Simulat.*, Vol. 16, No. 12, Dec. 2011, Pages 4619-4624 (SCI Expanded, 2015 Impact factor: 2.834)
- J.H. Merkin (UK) and V. Kumaran, Free convection stagnation-point boundary-layer flow in a porous medium with a density maximum, *Int. J. Ther. Sci.*, [Vol. 50, No. 11](#), Nov. 2011, Pages 2176-2183 (SCI Expanded, 2015 Impact factor: 2.769)
- V. Kumaran, A.K. Banerjee, A. Vanav Kumar and I. Pop (Romania), Unsteady MHD flow and heat transfer with viscous dissipation past a stretching sheet, *Int. Commun. Heat Mass Transfer*, Vol. 38, No.3, March 2011, Pages 335-339 (SCI Expanded, 2015 IF: 2.559)
- E. Magyari (Switzerland) and V. Kumaran, Generalized Crane flows of micropolar fluids, *Commun. Nonlin. Sci. Numer. Simulat.*, Vol. 15, No. 11, Nov. 2010, Pages 3237-3240 (SCI Expanded, 2015 Impact factor: 2.834)
- H.I. Andersson (Norway) and V. Kumaran, Comment on “Unsteady flow of a second grade fluid film over an unsteady stretching sheet” [Math. Comput. Model. 48 (2008) 518–526], *Math. Comp. Modelling*, Vol. 52, No's. 9-10, Nov. 2010, Pages 1706-1707 (SCI Expanded, 2015 Impact factor: 1.366)
- V. Kumaran, A. Vanav Kumar and I. Pop (Romania), Transition of MHD boundary layer flow past a stretching sheet, *Commun. Nonlin. Sci. Numer. Simulat.*, Vol. 15, No. 2, February 2010, Pages 300-311 (SCI Expanded, 2015 Impact factor: 2.834)
- V. Kumaran, R. Tamizharasi and K. Vajravelu (USA), Approximate analytic solutions of stagnation point flow in a porous medium, *Commun. Nonlin. Sci. Numer. Simulat.*, Vol. 14, No. 6, June 2009, Pages 2677-2688 (SCI Expand., 2015 IF: 2.834)
- V. Kumaran, A.K. Banerjee, A. Vanav Kumar and K. Vajravelu (USA), MHD flow past a stretching permeable sheet, *Appl. Math. Comp.*, Vol. 210, No. 1, Apr. 2009, Pages 26-32 (SCI Expanded, 2015 Impact factor: 1.345)

### (iii) Papers published in journals with no impact factor: (08 papers)

- Anne Rosaline A. and V. Kumaran, Analysis of accident reduction factor using pavement marking in intersection and plain roads, *Bull. Pure Appl. Sci.*, Vol 28E, No. 1, Pages 91-107, 2009.
- Senthil Kumar K., Suja S.K. and V. Kumaran, A new mode of transportation to minimize environment damage due to diesel exhausts, *Eco Chronicle*, Vol. 2, No.1, pp. 17-20, 2007.
- V. Kumaran and I. Pop, Analytic solutions of free convection boundary layer flow over a vertical flat plate embedded in a porous medium, *Int. J. Fluid Mechanics Research*, Vol. 31, No. 6, pp. 563-573, 2004.
- V. Kumaran, Comments on 'Unsteady free convection interaction with thermal radiation Boundary layer flow past a vertical porous plate', *J. Math. & Phys. Sci.*, Vol.30, pp. 159-160, 1996.

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- V. Kumaran and G. Ramanaiah, Effect of thermal dispersion on non-Darcy free convection over horizontal surfaces in saturated porous media, *J. Energy, Heat and Mass Transfer, Vol.17, pp.313-318, 1994.*
- G. Ramanaiah and V. Kumaran, Darcy - Brinkman free convection about wedge and a cone subjected to a mixed thermal boundary condition, *Int. J. Math. Math. Sci., Vol.15, No.4, pp.789- 794, 1992.*
- J. H. Merkin and V. Kumaran, Free convection boundary layer on a vertical surface with prescribed heat flux at small Prandtl number, *Int. J. Math. Math. Sci., Vol.15, No.3, pp.605-608, 1992.*
- V. Kumaran and G. Ramanaiah, Viscous lifting and drainage of a second-order fluid on a vertical plate, *Bulletin of Calcutta Math. Soc., Vol.84, pp.313- 322, 1992.*

### (B) Conferences/Workshops/Symposia Proceedings

Number of papers presented and published in Conference proceedings:

(Abroad–4, India –3)

- Unsteady MHD flow past a stretching sheet due to a heat source/sink (jointly with A.K. Banerjee, A. Vanav Kumar) - Proc. of the 3<sup>rd</sup> Conf. on Non-linear Science and Complexity, Ankara, *Turkey*, 28-31, July 2010.
- Impulsive boundary layer flow past a permeable quadratically stretching sheet - (jointly with A. Vanav Kumar and JSC Babu) - Proc. of the 2<sup>nd</sup> Conf. on Non-linear Science and Complexity, Porto, *Portugal*, 2008. (Presented by JSC Babu).
- Approximate analytical solutions of stagnation point flows in a porous medium - (jointly with R. Tamilarazhi) - Proc. of the 1<sup>st</sup> Int. Conf. on Non-linear Science and Complexity, Beijing, *China*, Vol.1, 2006.
- Bounds on probability of a finite union (Jointly with A. Prekopa, USA)– International conference on Operations Research, *Indian Statistical Institute, Kolkata*, 8-10 Jan. 2004.
- Convective heat transfer due to a rotating disk subjected to a mixed thermal boundary condition - (jointly with G. Ramanaiah) - Proc. of the 13th IMACS World Congress on Comp. and Appl. Math., *Ireland, U.K.*, Vol.2, pp.896-897, 1991.(not presented but published).
- Natural convection on a permeable vertical and horizontal plates subjected to a radiation boundary condition - (jointly with P G. Ramanaiah) – Proc. of the 36th ISTAM Congress, *India*, Vol.36, pp.31-44, 1991.
- Oscillatory flow of a viscous fluid over a porous bed with suction at the bottom - (jointly with G. Ramanaiah) - Proc. of the Math. Soc., B.H.U., *India*, Vol.4, pp.15-21, 1988.

### (C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
V.Kumaran Andras Prekopa	Bounds on Probability of a finite union- Chapter	Anamaya	2005	ISBN 81-88342-40-8