

# Preface

This volume consists of the proceedings of the 22nd International Conference on the Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2002), organized under the auspices of the Indian Association for Research in Computing Science (IARCS). The conference was held at the Indian Institute of Technology, Kanpur during December 12–14, 2002.

The conference attracted 108 submissions (of which two were withdrawn). Of these, a total of 26 papers were selected for presentation in the conference. As in the last year, the PC meeting was held electronically (stretching over nearly three weeks in August 2002) and was a great success.

In addition to the contributed papers, we had five invited speakers this year: Hendrik Lenstra, Jr., Harry Mairson, Dale Miller, Chih-Hao Luke Ong, and Margus Veanes. We thank them for accepting our invitation and for providing abstracts (or even full papers) for the proceedings.

Two workshops were organized in conjunction with the conference – both in Kanpur. A workshop on Parameterized Complexity was held during December 10–11, organized by Mike Fellows and Venkatesh Raman. The second workshop actually consisted of three miniworkshops: on Coding Theory by Madhu Sudan; on Finite Field Algorithms by Hendrik Lenstra, Jr.; and on Sieve Theory by R. Balasubramanian.

We wish to thank all the reviewers and PC members who contributed greatly to making the conference a success. We also wish to thank the team at Springer-Verlag for their help in preparing the proceedings.

December 2002

Manindra Agrawal  
Anil Seth

# Organization

FSTTCS 2002 was organized by the department of Computer Science and Engineering, Indian Institute of Technology, Kanpur, in cooperation with IARCS.

## Program Committee

Manindra Agrawal (IIT, Kanpur) (Co-chair)  
Thorsten Altenkirch (Nottingham, UK)  
Mike Fellows (Newcastle, Australia)  
Naveen Garg (IIT, Delhi, India)  
K. Gopinath (IISc, Bangalore, India)  
Peter O'Hearn (Queen Mary, London, UK)  
Martin Hofmann (LMU, Munich, Germany)  
Meena Mahajan (IMSc, Chennai, India)  
Rajeev Motwani (Stanford, USA)  
Rajagopal Nagarajan (Warwick, UK)  
Tobias Nipkow (TU Munich, Germany)  
Venkatesh Raman (IMSc, Chennai, India)  
R. Ramanujam (IMSc, Chennai, India)  
R. Ravi (CMU, US)  
Davide Sangiorgi (INRIA, France)  
Anil Seth (IIT, Kanpur, India) (Co-chair)  
G. Sivakumar (IIT, Mumbai, India)  
Colin Stirling (Edinburgh, UK)  
V. Vinay (IISc, Bangalore, India)  
Igor Walukiewicz (Bordeaux, France)  
Nobuko Yoshida (Imperial College, London, UK)

## Organizing Committee

Sanjeev Aggarwal (IIT, Kanpur, India)  
Manindra Agrawal (IIT, Kanpur, India)  
Sanjay Dhande (IIT, Kanpur, India)  
Anil Seth (IIT, Kanpur, India)

## Referees

Bharat Adsul	Andy Gordon	Gavin Lowe
Gagan Aggarwal	Daniele Gorla	Christoph Lüth
Roberto Amadio	R. Govindarajan	Anil Maheshwari
Giambattista Amati	Sudipto Guha	Monika Maidl
Torben Amtoft	Joshua D. Guttman	Harry Mairson
Richard Anderson	Hari Hampapuram	Rupak Majumdar
Sergio Antoy	Peter G. Hancock	Russell Martin
V. Arvind	Rene Rydhof Hansen	Fabio Martinelli
Nick Benton	T. Hardin	Jiri Matousek
Josh Berdine	Harald Hempel	Francois Maurel
Stefan Berghofer	Kohei Honda	B. Meenakshi
Therese Biedl	Hans Hüttel	M. Merro
Somenath Biswas	Sanjay Jain	Stephan Merz
Genest Blaise	David Janin	Ron van der Meyden
Bruno Blanchet	Leroux Jerome	Peter Bro Miltersen
Bernard Boigelot	Felix Joachimski	S. Mishra
Julian Bradfield	R.K. Joshi	Kundan Misra
Cristiano Calcagno	Steffen Jost	Swarup Kumar Mohalik
Didier Caucal	Sara Kalvala	Mark Moir
L. Sunil Chandran	V. Kamakoti	Christophe Morvan
Chandra Chekuri	Hartmut Klauck	Pablo Moscato
Benny Chor	Adam Klivans	Jose M. Sempere
Peter Clote	Neal Koblitz	Madhavan Mukund
Amitava Datta	Jochen Konemann	Andrzej Murawski
Anuj Dawar	Maciej Koutny	H. Nagamochi
Erik Demaine	Narasimha Mandyam	N.S. Narayanaswamy
Kedar Dhamdhare	Krishnakumar	Ashwin Nayak
Rod Downey	Ramesh Krishnamurti	Ilan Newman
Aldrin John D'Souza	S. Krishnan	Peter Niebert
Javier Esparza	Armin Kühnemann	Mogens Nielsen
Kousha Etessami	Sandeep Kulkarni	Liadan O'Callaghan
Henning Fernau	D. Phaneendra Kumar	Mitsunori Ogihara
Melvin Fitting	K. Narayan Kumar	Mitsuhiro Okada
Arnaud Fleury	Viktor Kuncak	Luke Ong
P. Fradet	Piyush P. Kurur	Friedrich Otto
Martin Fraumlnzle	Orna Kupferman	Paritosh K. Pandya
Thom Fruehwirth	Dietrich Kuske	Rina Panigrahy
Vijay K. Garg	Martin Kutrib	Kapil Hari Paranjape
William Gasarch	Martin Lange	Ojas Parekh
Simon Gay	Luciano Lavagno	Rohit Parikh
Thomas Genet	Ranko Lazic	Dirk Pattinson
Konstantinos Georgatos	Ming Li	Jean-Guy Penaud
Aristides Gionis	Kamal Lodaya	Iain Phillips
Valentin Goranko	Hans-Wolfgang Loidl	David Plaisted

## VIII Organization

Randy Pollack	Paula Severi	Thomas Thierauf
Jaikumar	Priti Shankar	Wolfgang Thomas
Radhakrishnan	Dmitry Shkatov	Tayssir Touili
Balaji Raghavachari	Amitabh Sinha	Ralf Treinen
Krithi Ramamritham	Rani Siromoney	Vincent Vanackere
Rajeev Raman	Milind Sohoni	Daniele Varacca
S. Ramesh	Paul Spirakis	Kasturi Varadarajan
Abhiram G. Ranade	Aravind Srinivasan	Moshe Vardi
Julian Rathke	Alin Stefanescu	Umesh Vazirani
Uday Reddy	Ulrike Stege	Santosh Vempala
Klaus Reinhardt	S.P. Suresh	Sundar Vishwanathan
Eike Ritter	Scott D. Stoller	Vinodchandran N. Variyam
Stefan Rook	Martin Strecker	Maria Grazia Vigliotti
Peter Rossmanith	C.R. Subramanian	Erik de Vink
Frank Ruskey	P.R. Subramanya	Fer-Jan de Vries
Ivano Salvo	K.V. Subrahmanyam	Todd Wareham
Prahladavaradan	S. Sudarshan	Pascal Weil
Sampath	Peter J. Taillon	Thomas Wilke
Amitabha Sanyal	Olivier Tardieu	An Zhu
Pranab Sen	Kazushige Terui	
Sanjit Seshia	P.S. Thiagarajan	

## Sponsoring Institution

Indian Institute of Technology, Kanpur