

## [International Workshop on Cryptography and Coding Theory](#)

A Virtual Event held online during

March 8-12, 2021

Supported by the

[Center of Excellence in Signal and Image Processing](#)  
[SGGS Institute of Engineering and Technology](#), Nanded, India

through

[Technical Education Quality Improvement Project \(TEQIP III\)](#)

### Speakers

- [Peter Beelen](#), Technical University of Denmark, Copenhagen, Denmark
- [Mrinmoy Datta](#), IIT Hyderabad, India
- [Sudhir Ghorpade](#), IIT Bombay, India
- [Sartaj Ul Hasan](#), IIT Jammu, India
- [Anna-Lena Horlemann-Trautmann](#), University of St. Gallen, Switzerland
- [Chunlei Li](#), University of Bergen, Norway
- [Frédérique Oggier](#), Nanyang Technological University, Singapore
- [Samrith Ram](#), IIIT Delhi, India (2 lectures)
- [Alberto Ravagnani](#), Eindhoven University of Technology, Netherlands
- [Bimal Roy](#), R.C. Bose Centre for Cryptology and Security, ISI, Kolkata, India
- [Santanu Sarkar](#), IIT Madras, India
- [Pantelimon Stanica](#), Naval Postgraduate School, Monterey, CA, USA

### Aims and Prerequisites

The workshop is intended for Masters level and fresh Ph.D. students, college teachers, and young researchers in Mathematics, Computer Science, or Electrical Engineering, with an interest in the topic of the workshop. Basic background in linear and abstract algebra will be assumed. Prior exposure to cryptography or coding theory is desirable, but not mandatory. First few lectures will provide a brisk review of some basics. Most lectures will generally assume only the material covered in the preceding lectures. At the same time, at least a few of the lectures will give an idea of some recent developments and open problems in the field.

### Organizers

**Sudhir R. Ghorpade**, IIT Bombay, India

**Sartaj Ul Hasan**, IIT Jammu, India

**Arunkumar R. Patil**, SGGS – IET, Nanded, India

## Schedule

**Inauguration:** 13.30 – 13.45 IST on Monday, 8<sup>th</sup> March 2021

### Lecture Schedule:

IST (India)	14.00 – 15.00	15.30 – 16.30	17.00 – 18.00	18.30 – 19.30	20.00 – 21.00
CET (Europe)	09.30 – 10.30	11.00 – 12.00	12.30 – 13.30	14.00 – 15.00	15.30 – 16.30
SGT (Singapore)	16.30 – 17.30	18.00 – 19.00	19.30 – 20.30	21.00 – 22.00	22.30 – 23.30
PST (USA)	00.30 – 01.30	02.00 – 03.00	03.30 – 04.30	05.00 – 06.00	06.30 – 07.30
Monday, 8 Mar 2021	Bimal Roy	Samrith	Ghorpade	Beelen	Stanica
Tuesday, 9 Mar 2021	Sartaj	Ravagnani	Ghorpade	Sarkar	Stanica
Wednesday, 10 Mar 2021	Oggier	Ravagnani	Anna-Lena	Datta	Sarkar
Thursday, 11 Mar 2021	Oggier	Ravagnani	Anna-Lena	Beelen	Chunlei
Friday, 12 Mar 2021	Oggier	Sartaj	Samrith	Datta	Chunlei

Topics to be covered:

**Peter Beelen:** *Decoding of Reed-Solomon Codes* (2 lectures)

**Mrinmoy Datta:** *Generalized Hamming weights of Reed-Muller codes* (2 lectures)

**Sudhir Ghorpade:** *Introduction to linear codes and Reed-Muller codes* (2 lectures)

**Sartaj Ul Hasan:** *Introduction to Stream Ciphers* (Lec 1); *Linear Feedback Shift Registers* (Lec 2)

**Anna-Lena Horlemann-Trautmann:** *Introduction to Network Coding* (2 lectures)

**Chunlei Li:** *Linear Codes from Nonlinear Functions* (Lec 1); *Rank-based Cryptography* (Lec 2)

**Frédérique Oggier:** *Lattices and Codes* (3 lectures)

**Samrith Ram:** *Polynomials over Finite Fields* (Lec 1); *Splitting subspaces and  $\sigma$ -LFSRs* (Lec 2)

**Alberto Ravagnani:** *Rank-metric codes* (3 lectures)

**Bimal Roy:** *Some issues in cryptography* (1 Lecture)

**Santanu Sarkar:** *Public Key Cryptography* (Lec 1); *Attacks on RSA* (Lec 2)

**P. Stanica:** *Introduction to Cryptography - A Historical Look* (Lec 1); *Block Ciphers Overview* (Lec 2)

## Registration and Link for Participation

Participation in this workshop will be free for anyone interested, but registration is mandatory. This can be done on the website of the workshop:

<https://sites.google.com/view/iwcc2021/>

In case a participant requires a certificate for participation, then he/she should attend at least 50% of the lectures and pay a moderate registration fee, which will be as follows.

- For participants from India : Rs. 2000
- For participants outside India : 25 Euros or 30 US Dollars

Use the [payment link](#) and follow the [instructions](#) on the registration form, if you say “Yes” to requiring a certificate of participation. No payment is required if a certificate is not needed.

Link for participation will be displayed once the registration form is submitted. In case of any queries, please contact the organizers at: [iwccmaths@gmail.com](mailto:iwccmaths@gmail.com)