



# IEEE WCNC 2022 Workshop on Rate-Splitting and Next Generation Multiple Access

## **Call For Papers**

Rate-Splitting Multiple Access (RSMA) based on Rate-Splitting (RS) is recognized as a more general and powerful transmission framework for the design and optimization of non-orthogonal transmission, multiple access, and interference management strategies. By splitting user messages into common and private parts at the transmitter, and partially decoding interference and treating remaining part of the interference as noise, RSMA enables to softly bridge and therefore reconcile the two extreme interference management strategies of treating interference as noise (as commonly used in 4G/5G, multi-user MIMO, coordinated multipoint-CoMP, massive MIMO, millimetre wave MIMO) and fully decoding interference (as in non-orthogonal multiple access-NOMA). Therefore, RSMA provides room for spectral efficiency, energy efficiency and Quality-of-Service (QoS) enhancements, robustness to imperfect channel state information at the transmitter (CSIT), and feedback overhead and complexity reduction. Next Generation Multiple Access (NGMA) is envisioned to efficiently cope with the high throughput, heterogeneity of QoS, ultra-reliability, low latency, and massive connectivity requirements of future multiantenna wireless networks. The capabilities of decreasing latency, improving throughput, and enhancing robustness under user mobility and latency in the network make RSMA an excellent candidate for NGMA.

This workshop is dedicated to the theory, design, optimization and applications of RSMA and any other potential multiple access techniques in many different scenarios relevant to wireless communication and signal processing for 6G. The workshop will give the audience a comprehensive introduction of the state-of-the-art development in RS and NGMA in the wireless communication and signal processing society.

#### Topics of interest include, but are not limited to:

- Rate-Splitting Multiple Access to generalize SDMA and NOMA
- RS/NGMA to achieve the fundamental limits of wireless networks
- RS/NGMA for multi-user/multi-cell multi-antenna networks
- RS/NGMA-based robust interference management
- RS/NGMA in MU-MIMO, CoMP, massive MIMO, millimetrewave MIMO, relay, cognitive radio, coded caching, physical layer security, cooperative communications
- Physical layer design of RS/NGMA-based network
- Coding and Modulation for RS/NGMA
- Cross-layer design, optimization and performance analysis of RS/NGMA
- Implementation and standardization of RS/NGMA
- RS/NGMA in B5G services and applications such as enhanced eMBB, enhanced URLLC, enhanced MTC, massive MTC, massive IoT, V2X, cellular, UAV and satellite networks, wireless powered communications, integrated communications and sensing, etc.

Full details of submission procedures are available at <a href="https://wcnc2022.ieee-wcnc.org/">https://wcnc2022.ieee-wcnc.org/</a>

#### **Important Dates**

- Paper Submission Deadline: January 21, 2022
- Acceptance Notification: February, 2022
- **Final Paper Submission:** *February, 2022*

#### **Keynotes**

**Prof. Rodrigo C. de Lamare** University of York, UK

### Workshop Co-Chairs

<b>Prof. Bruno Clerckx</b> Imperial College London, UK	<b>Prof. Aydin Sezgin</b> Ruhr-University Bochum, Germany	<b>Prof. Wonjae Shin</b> Ajou University, South Korea	<b>Prof. Yijie (Lina) Mao</b> ShanghaiTech University, China
	Technical Prog	ram Committee	
<ul> <li>Robert Schober (University of Erlangen-Nuremberg)</li> <li>Eduard Jorswieck (Technical University of Braunschweig)</li> <li>Wolfgang Utschick (Technical University of Munich)</li> <li>Halim Yanikomeroglu (Carleton University)</li> <li>Luca Sanguinetti (Pisa University)</li> <li>Hamdi Joudeh (Eindhoven University)</li> </ul>	<ul> <li>Hayssam Dahrouj (Ki University of Science</li> <li>Leila Musavian, (University of Science)</li> <li>Leila Musavian, (University of Technology)</li> <li>Onur Dizdar (Imperia)</li> <li>Pei Xiao (University of Carlos Mosquera (University of Catholic University of Catho</li></ul>	ng Abdullah • S and Technology) versity of Essex) • 2 • China University • 1 • College London) of Surrey) • 2 • iversity of Vigo) • (Pontifical • 1 f Rio de Janeiro)	Seok-Hwan Park (Jeonbuk National University) Xinping Yi (University of Liverpool) Melda Yuksel (TOBB University of Economics and Technology) Wael Jaafar (Carleton University) Zhaohui Yang (Kings College London) De Mi (University of Surrey) Bho Matthiesen (University of Bremen) Abdelhamid Salem (University College London)