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CMR UNIVERSITY

Private University Established in Karnataka State by Act No. 45 of 2013

Invited Webinar

**Device-to-Device Communication in
"5G and Beyond": Architecture, Features,
Challenges and Future Research Directions**

on

Saturday, May 16, 2020 between 10.00 and 11.30 a.m.

by

Mr. Pradip Kumar Barik

Link to Register: <https://forms.gle/tkC4DLV31evX77P46>

Organized by:

Department of Electronics and Communication Engineering
School of Engineering and Technology,
CMR University (Main Campus),
Bengaluru - 562149

About the CMR University

CMR University (CMRU) is a private university in the state of Karnataka, established and governed by the CMR University Act-2013. CMR University aims to promote and undertake the advancement of university education in technical, health, management, life sciences and other allied sectors of higher and professional education.

We believe that creativity is the key competence required to excel in our complex world where independent thinkers, product leaders, artists, designers and innovators are the need of the hour. Our students learn creative concepts and design thinking regardless of their area of study. CMR University fosters creative communities where new ideas can be nurtured, new discoveries made and new creations shared.

Overview of the Webinar

5G Mobile Communication System is supposed to provide a perception of 99.99% connectivity. The essential requirements of 5G are higher throughput, enormous capability, energy efficient transmission, ultra-low latency, and support of rich multimedia applications. 5G cellular network has been tremendously used in automated vehicles, IoT applications, video streaming, mobile TV etc. To provide seamless connectivity, higher spectral and energy efficiency, device-to-device (D2D) communication has become a key technology in 5G. D2D communication helps in meeting various requirements of 5G. However, there are several challenges such as proper resource allocation, mode selection, device discovery, and mobility in D2D enabled 5G networks. In this talk, we will cover the basic architecture and components of 5G. The major differences between 4G and 5G will be discussed (w.r.to architecture and features). The concept of D2D communication, its challenges and solution approach of a resource allocation problem will be discussed subsequently. Finally, we will conclude with some future research problems in “5G and beyond” mobile networks.

Profile of the Speaker:

Mr. Pradip Kumar Barik received the B.Tech degree in Electronics and Communication engineering from Kalyani Govt. Engg. College, West Bengal, India in 2012 and M.Tech degree in Communication Engineering from NITK Surathkal in 2014. He is a **Gold Medalist from NITK, Surthkal**. He was with **Broadcom India PVT LTD as system design engineer** in Cellular Protocol Development and Testing division and Assistant professor at CMRIT, Bangalore. He is currently pursuing the PhD degree from E&ECE department, IIT Kharagpur. His **current research** interest includes adaptive multimedia services over heterogeneous 5G cellular networks, cross-layer optimization in wireless networks, resource allocation for D2D and M2M communication, and machine learning for wireless communication. He has both journal and conference publications namely, Elsevier Computer Communications and IEEE conferences. Recently, part of his doctoral work was recognized with an acceptance for publication in **IEEE transactions on vehicular technology**.

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