

## Foreword

There is increasing awareness on the need to be gentle with our environment. Technology has transformed our lives; in enabling greater speed in communication, mobility and lead a healthier life. It is rather paradoxical that while we are so well connected to each other, we are now more disconnected with nature. By overworking ourselves we are also 'overworking' nature. This overexploitation has led to large scale changes to the environment and rightly we are now in an 'ecological overshoot'. Anthropogenic efforts have accelerated environmental degradation and interfered with its regenerating and self-reorganising ability. We need to accept that we live in a 'changed climate' and unless we act with urgency we will not be able to deal with climate change.

This Special Issue on '*New technologies, Climate Change and IPR*' is partly inspired by the workshop conducted in early 2017 in IIT Kharagpur on "Climate Change and Intellectual Property" organized under the aegis of the MHRD IPR Chair. The presenters dealt with the prospects as well as challenges in commercialization of 'climate technologies'. Some of the aspects discussed include studies on how environmental innovations are growing to be an important aspect of IPR portfolio of different entities, on how IPR regime should take into consideration human rights; respect indigenous, child and women rights, status on international negotiations on technology transfer in the area, whether a stronger IPR regime will assist in adoption of climate technologies or not, to what extent biodiversity conservation can be fostered and how smart cities are being built taking into consideration 'green norms'.

Climate change is complex and needs a multi-pronged approach. In this special issue, the readers will understand how patents can enable the implementation of clean energy innovations and how innovations are essential for mitigating climate change from the paper of Prof. Armin Rosencranz, Pranav Modi, Sangram Parab and Aditya Vora. In their paper on "Patenting in the Renewable Energy Sector", Dr. Tapas Bandyopadhyay and Ms. Shweta Khurana analysed the global patenting trends in this sector and also analysed the policy perspective of some countries. They examined whether greater number of patents for specific type of renewable energy is also a result of policy support in the respective areas. Dr Arindam Basu in his paper on "International Negotiations on Technology Transfer for Climate Technologies" examined the Indian context on how policy and law can assist in lead to clean energy development and effective adoption. India is in the forefront in the international negotiations on fostering the sustainability dialogue. Effective implementation of the Paris Agreement and climate change action plans will be essential for India to demonstrate this commitment. Dr Kim Bouwer, in studying "The Relationship of Climate Technology Transfer from International Human Rights Perspective", critically examined how one-way technology transfer can bring concerns on claims, enforcement on one hand and on the other hand how human rights violation, benefit sharing issues. To this end, what are all inclusive aspects of a climate policy is an important consideration. In their paper on "How Human Rights are to be an Integral Part of Climate Technology Adoption", Dr Uday Shankar, Dr. Tapas Bandopadhyay and Ms. Chandrika examined pros and cons of climate technology transfer and effect on human rights. Recognition of the right to access energy as a human right will help resolve some of the issues in relation to access to technologies to mitigate climate change. The paper from the Guest Editor attempts to analyse the recent international efforts in considering Traditional Knowledge (TK) to be an essential answer for climate change problems and India's efforts in TK conservation and protection. Ensuring TK longevity is imperative to address approaches to mitigating climate change.

I express my personal gratitude to each contributing author of sharing their views on this important theme and for extending their cooperation in bringing out this special issue. We are very grateful to the reviewers who have taken time out from their busy schedules to review the manuscripts. We record with

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I acknowledge the support of my institute, the Indian Institute of Technology Kharagpur for allowing me to be a part of the Editorial Board. I am also thankful to the Director, CSIR-NISCAIR for having agreed to bring out a special issue of JIPR containing selected papers presented during the workshop conducted at IIT Kharagpur on “Climate Change and Intellectual Property” organized under the aegis of the MHRD IPR Chair. Finally, I would like to express my special gratitude to Mrs. Kanika Malik, Editor, *Journal of Intellectual Property Rights*, CSIR-NISCAIR who has encouraged and constantly supported the need for this special volume of JIPR on “**New Technologies, Climate Change and IPR**”.

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