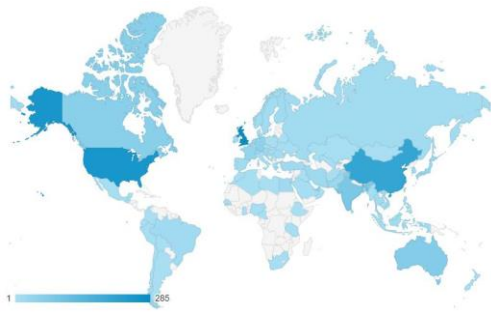


# University Transformer Research Alliance

## Chairs Report (2020-2021)

The University Transformer Research Alliance (UTRA) was established in February 2019, bringing together five internationally leading transformer research groups from the UK, Germany, China and Australia, with the aim to enable the synergic benefits in pursuit of the advancement of knowledge in the areas of transformer related research, and through research leadership, strategic research direction and guidance, engaging stakeholders and recognising young talent. In the first year of UTRA, we worked together to lay a foundation through various publicity campaigns and building new relationships with the wider transformer community. These relationships were further strengthened during 2020-2021 period.



Heat map of UTRA website users

### (1) UTRA website

The UTRA website (<http://www.university-transformer-research.com/>) was further updated to include an exclusive member area which allows documents and webinar videos to be stored for members to access later. Also, there was a steady flow of new users visiting the website with nearly 1500 visits.

### (2) UTRA Seminars and Conference

Similar to many areas, COVID-19 Pandemic had many impacts on academia including the cancellation of all in-person activities. However, we utilised this opportunity to deliver more online seminars. The first seminar was delivered by Prof. Zhongdong Wang and Dr. Shanika Matharage in May 2020. The success of the seminar led to the organisation of the first UTRA conference in December 2020 with five presentations from the members of UTRA. The conference was a great success with over 40 participants attending the presentations.

A slide titled "UTRA Conference 2020" with a dark background and purple lightning bolt graphics. It lists a schedule of presentations with columns for Time (UK Time), University, Presenter, and Presentation title. Logos of the five member universities are shown at the bottom.

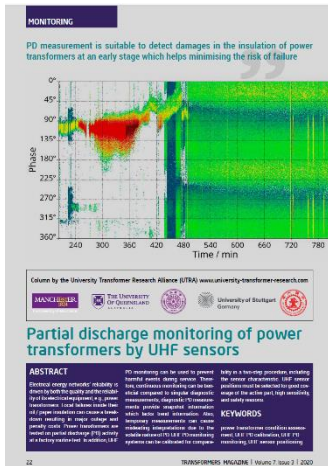
Time (UK Time)	University	Presenter	Presentation title
7.30 – 8.00 a.m.	University of Manchester	Bohui Cheng	Using lumped element equivalent network model to derive analytical equations for interpretation of transformer frequency responses
8.00 – 8.30 a.m.	University of Queensland	Shanika Samarasinghe	Preventing transformer failures caused by silver sulphide corrosion
8.30 – 9.00 a.m.	Stuttgart University	Chandra P. Beura	UHF sensor placement on power transformers for PD monitoring
9.00 – 9.30 a.m.	Tsinghua University	Jianming Chen	Multi-time-scale simulation for surface discharge in transformer insulation
9.30 – 10.00 a.m.	Xi'an Jiaotong University	Prof. Ming Dong	Discharge microsecond parameters measurement and electrical modification mechanism of transformer oil-based nanofluids
10.00 – 10.10 a.m.	Best presenter award		

UTRA conference in 2020

### (5) UTRA Column in Transformer Magazine

During this year we published three UTRA columns in the Transformers magazine. List of the articles are given below.

1. “Partial discharge monitoring of power transformers by UHF sensors” by University of Stuttgart
2. Vibration-measurement- based Condition monitoring” by Xi’an Jiaotong University and University of Queensland
3. “Super large capacity converter transformer” by Tsinghua University



Transformer Magazine article

## (6) Individual and Invited Membership

Further discussions were continued during the year on the creation of individual membership. It was agreed that two individual membership criteria will be created; individual membership and invited membership. However, with the agreement of all members, it was decided to pause these memberships for the time being.

Lastly, we also had the University of Exeter join as a new permanent member of the UTRA.

It is time for me to hand over the steering of UTRA to Prof Yuanxiang Zhou from Tsinghua University as the Chair and welcome his Co-Chair, Prof. Tapan Saha from the University of Queensland. I sincerely wish them every success as they guide the UTRA in 2021.

I would also like to thank all members and their teams for the hard work and support provided during this year.

Prof Stefan Tenbohlen

UTRA chair in 2021