

## TC ANNUAL REPORTING FORM

### IMS Technical Committee

#### TC3- Condition Monitoring & Fault Diagnosis Instrument

#### Reporting period

Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Date of submission (dd/mm/yy)
12/10/2019	1/9/2020	11/9/2020

Website N/A

Last update (mm/yy)

#### TC Chair or co-Chairs

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
<i>Xuefeng</i>		Chen	Xi'an Jiaotong University, China	92136442	+86 13689253672	chenxf@xjtu.edu.cn	12/10/2019
<i>Weihua</i>		Li	South China University of Technology, China	92239334	+86 13751849150	whlee@scut.edu.cn	12/10/2019

#### Secretary (check the right box)

Present

Not Present

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
<i>Yanmeng</i>		Liu	Xi'an Jiaotong University, China	N/A	+86 18109205059	chrisliuyanmeng@xjtu.edu.au	

#### TC Membership list<sup>(\*)</sup>

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	TC assignments (joining year)
<i>Xuefeng</i>		Chen	Xi'an Jiaotong University, China	92136442	+86 13689253672	chenxf@xjtu.edu.cn	2019
<i>Weihua</i>		Li	South China University of Technology,	92239334	+86 13751849150	whlee@scut.edu.cn	2019

\* Please add as many rows as needed

China						
Zhaoyan	Fan	Oregon State University, USA	80022756		Zhaoyan.fan@oregonstate.edu	2019
Peng	Wang	University of Kentucky, USA	92578261		Edward.Wang@uky.edu	2019
Xingwu	Zhang	Xi'an Jiaotong University, China	93066541	+86 15829704145	xwzhang@xjtu.edu.cn	2019
Qingbo	He	Shanghai Jiaotong University, China	91234903		qbhe@sjtu.edu.cn	2019
Datong	Liu	Harbin Institute of Technology, China	91290762		liudatong@hit.edu.cn	2019
Zhibo	Yang	Xi'an Jiaotong University, China	93064776	+86 18092795291	Yangbo-5-7@163.com	2019
Yanjie	Guo	Xi'an Jiaotong University, China	93064776		guoyanjie@xjtu.edu.cn	2019
Ruqiang	Yan	Xi'an Jiaotong University, China	41600650	+86 13584054760	yanruqiang@xjtu.edu.cn	2019

### TC mission – field of expertise (max. 1000 char. Including spaces)

The technical committee aims at serving as a platform for scientists and engineers involved in the field of condition monitoring & fault diagnosis, with a focus on the potential applications in industry:

- Encourage theoretical and technical research related to condition monitoring & fault diagnosis.
- Promote research for diagnosing major technical equipment in the fields of new energy, rail transit, aeronautics and astronautics, etc.
- Integrate data processing methods of compressed sensing, big data, deep learning together with mechanical system mechanism to develop intelligent diagnosis and prediction.
- Develop software and hardware systems to facilitate condition monitoring & fault diagnosis.
- Stimulate knowledge exchange between scientists, provide professional consultative opinions for industry of condition monitoring & fault diagnosis, and promote new standards and guidelines.

### TC meetings in the reporting period<sup>(\*)</sup>

Date (dd/mm/yy)	Online / Face2Face	Attendance (number)	TC Members	Information sent within 4 months to (Yes/No)		
				Chair of TSAC	IM Magazine	Other (specify)

\* Please add as many rows as needed

15/11/2019	Face to face	22	Yes
15/6/2020	online	22	Yes
15/8/2020	online	25	Yes

## Minutes of the yearly meeting (separate file)<sup>1</sup>:

## Participation in Society sponsored Events (Conferences, Symposia, Workshops)<sup>(\*)</sup>

Name of the Event	Starting date (event) (dd/mm/yy)	Ending date (event) (dd/mm/yy)	Date Participation (dd/mm/yy)	Type of participation (Yes/No)			
				Sponsorship	Session	Tutorial	Other (specify) <sup>2</sup>
<i>I2MTC 2020 Special Session</i>	May 25, 2020	May 28, 2020	May 25-28, 2020	Yes	Yes	No	
<i>ICSMD 2020</i>	October 15, 2020	October 17, 2020	October 15-17, 2020	Yes	Yes	Yes	
<i>Seminar on Machinery Health Monitoring and Prognosis</i>	December 15, 2019	December 16, 2019	December 15-16, 2019	Yes	Yes	Yes	
<i>Power Plants Industry Consultancy</i>	December 17, 2019	December 18, 2019	December 17-18, 2019	Yes	No	No	
<i>2020 National Equipment Monitoring and Maintenance Conference</i>	August 19, 2020	August 21, 2020	August 19-21, 2020	Yes	Yes	Yes	
<i>14th International Conference on Frontiers of Design and Manufacturing (ICFDM 2020)</i>	September 11, 2020	September 13, 2020	September 11-13, 2020	Yes	Yes	Yes	

## Involvement in standard development<sup>(\*)</sup>

Standard	Working Group	Revision	Activity in the reporting period, including dates	Notes, attendance
----------	---------------	----------	---	-------------------

## Participation in the development of Society Educational Programs<sup>(\*)</sup>

<sup>1</sup> Yes/No, date of the yearly meeting;

<sup>2</sup> For example, Involvement in reviewing papers (and indicate approximate number of paper reviews for the listed event)

\* Please add as many rows as needed

Program name	Involvement of chapters and sections	Activity in the reporting period, including dates	Notes, attendance
--------------	--------------------------------------	---	-------------------

**Other Activities (tutorials, teaching, career, cooperation, publications, joint activity with chapters or sections) (\*)**

Type of activity	Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Activity in the reporting period	Notes, attendance
Teaching	24/2/2020	8/4/2020	English-taught course of "Measurement technology"	Members of student chapter.
Paper review	25/5/ 2020	28/5/2020	Organizing paper review procedure for I2MTC 2020.	Members and cooperation partners of TC3
Paper review	15/10/2020	17/10/2020	Organizing paper review procedure for ICSMD 2020.	Members and cooperation partners of TC3
Member of Editor Broads	1/1/2021	31/12/2024	Journal of Vibration Engineering	Co-Chair, Prof. Weihua Li

**Recommended candidates(\*)**

Type (ADCOM, Fellow, Award –specify-)	First Name	Second Name	Family Name	Affiliation /Address	Motivation
---------------------------------------	------------	-------------	-------------	----------------------	------------

**TC operating Plan: near-term plans for the upcoming year, including scheduled meetings, activities, and so on (max. 1000 char. Including spaces)**

For the year of 2020, TC-3 would like to make a comprehensive plan, which is centered with the proposed aims of TC-3. For the aim of encouraging research on condition monitoring and fault diagnosis, TC-3 will focus on diagnosing and maintenance of major equipment in the fields of new energy, high-speed rail transit, nuclear plants, etc. In terms of organizing events related to condition monitoring and fault diagnosis and facilitating the exchange of knowledge between scientists, TC-3 would be a major participant to organize several conferences and seminars in the coming year. For example, I2MTC 2021 Special Session, ICSMD 2021, etc.

Through multiple academic activities, TC-3 would get in touch with more academic and industrial resource and experts; these will also potentially be a start for new research projects; young talents would get more opportunities to learn and to show themselves at an international stage; and these activities will definitely be pillars to explore new grounds for the future.

\* Please add as many rows as needed

---

Furthermore, another aim of TC-3 is to become a consultative body for industry in the field of condition monitoring and fault diagnosis, and the plan to realize this aim is to enhance connections with the industry together with newly-established platforms like iAFE and EMIM.

To be specific, TC-3 plans to discuss condition monitoring and fault diagnosis problems encountered by the industry. They include Xi'an Shaangu Power Co., Ltd., Air China Xi'an Aero Engine Co., Ltd., China Shipbuilding Industry System Engineering Research Institute, Yongji Motor Co., Ltd., Guangzhou Hangxin Aviation Technology Co., Ltd., Baoji Times Construction Machinery Co., Ltd., Shandong Wind Power Co., Ltd., Xi'an Intermax Information Technology Co., Ltd., etc. Overall, the plan for 2021 is guided by the aims of TC-3, on the solid foundation laid by the efforts of previous year.

---

**TC operating plan: long term vision from 2-5 years out, based on IMS Strategic Plan, including areas of strength, areas for improvement, how is the subject area going to change, planned actions for lifting achievement succession plans etc. (max. 1000 char. Including spaces)**

---

TC-3 is young as it is established in 2019, but many efforts are done to prepare for its establishment, and more progresses are achieved since then. Thanks to the active role of Instrumentation and Measurement Magazine and efforts of TC-3 members, major progresses have been made in terms of public service, research projects, talent cultivation, and platform construction.

For the future 5 years, we will continue to follow the guidance of the Instrumentation & Measurement Society, and the aims of the Technical Committee-3. Based on the experience of the past year, we plan to emphasize following perspectives for the next five-year period.

I. Establishment of industrial standards. We plan to close cooperation with the industries, especially major equipment industries, to establish industry standards in terms of condition monitoring and fault diagnosis. For example, Prof. Xuefeng Chen will serve as the deputy secretary-general of Aero Engine Corporation of China (AECC) Industry-university Alliance. This position is a recognition of his contribution in the industrial application of research on condition monitoring and fault diagnosis. Prof. Chen would integrate the resources from TC-3 and AECC Industry-university Alliance, and give the advantages of the two a full play. And together with TC-3, we would give professional consultancy and standard guidance for the industry.

II. Attraction of new members. As a new-born technical committee, we welcome and wish to attract more members into this family, including both industry professionals, university teachers, researchers and students as well. For young scholars, including PhD students, researchers and lecturers, they would join the TC-3 through research projects. TC-3 is attracting talented young scholars. For example, a PhD student, Shuming Wu, is the recipient of the Instrumentation and Measurement Society 2019 Graduate Fellowship Award, Ruyi Huang, is the recipient of the Instrumentation and Measurement Society 2020 Graduate Fellowship Award; And the dissertation of Dr. Baijie Qiao is listed as Shaanxi Provincial Excellent Doctoral Degree Dissertation. They are joining the team. And young scholars like them would definitely be rising stars to push forward sustainable development of TC-3 and the Society at large.

III. Activity organization as the communication platform for both the academic and the industry. As described previously, we will organize conferences, seminars and workshops expertizing in condition monitoring and fault diagnosis. For the next five years, we will pay more attention to broader platforms, and more internationalized environment. In order to reach this aim, we will extend our academic network through active roles in international academic activities.

In the past year, the TC-3 of Condition Monitoring and Fault Diagnosis works well as an excellent vehicle for communication and exchange of information between industry and academia. I&M Society and Instrumentation and Measurement Magazine have always been a strong support for TC-3 to organize academic activities and start joint research projects. For the year ahead, with the consistent support of the

---

\* Please add as many rows as needed



---

Society and the magazine, TC-3 would play a more active role in the field of condition monitoring and fault diagnosis.

---

**TC convergence, synergy, cooperation with other TC, from I&M or other societies (max. 1000 char. Including spaces)**

---

In the past one year, 5 international professionals are invited to visit in total, e.g. Prof. Salvatore Baglio, Prof. Nikhil R Pal, etc. Meanwhile, scholars are encouraged to participate international conferences. Members of TC-3 are invited to be the keynote speakers for several times as well. These activities enlarge the academic network, and actively connect scholars regardless of their geographic difference.

TC-3 and TC-7 are working together to jointly organize academic conferences, like ICSMD 2020. Members of both committees also connect with each other through frequent communication. For the cooperation with industry, both of the committees do industry consultancy and suggest industry standards in the field of fault diagnosis instruments.

We hope to enhance interactions with peer TCs, I&M Society and other societies, to reach win-win future.

---

**Comments/Suggestions (max. 1000 char. Including spaces)**

---

  

---

\* Please add as many rows as needed