

Innovation based on Basic Science

基礎を極めてイノベーションへ



International Rubber Conference

Kitakyushu Japan

国際ゴム技術会議 北九州

October 24 ~ 28, 2016

IRC
KITAKYUSHU
2016

The Society of Rubber Science and
Technology, Japan

IRC 
International Rubber
Conference Organisation

2nd Circular

<http://www.irc2016.com>

CHAIRMAN'S WELCOME

On behalf of the Organizing Committee and the Society of Rubber Science and Technology, Japan, I would like to cordially invite you to THE INTERNATIONAL RUBBER CONFERENCE 2016 KITAKYUSHU (IRC2016 KITAKYUSHU).

This is the fifth time conference held in Japan following Tokyo in 1975, Kyoto in 1985, Kobe in 1995, and Yokohama in 2005. Each IRC was attended by more than 600 participants from over 30 countries and simultaneously hosted a large-scale rubber technical exhibition with more than 4500 visitors in total. The International Rubber Conference and its exhibition must be one of the largest events on rubber and elastomer fields in the world, and there is no doubt that they will be an excellent opportunity for you to promote your science, technologies, and products globally.



Kitakyushu is a port city that has been developed as the largest heavy industrial district in the Kyushu region, and it has a lot of factories to manufacture automobiles and tires, etc. in its vicinity. We believe Kitakyushu is the most suitable place to discuss the future of rubber and elastomer industry and you can enjoy this very attractive city that has a lot of scenic spots and historical architectures. IRC2016 KITAKYUSHU will be held at Kitakyushu International Conference Center and West Japan General Exhibition Center, one of the largest convention and exhibition centers in the world. It is located in the center of downtown Kitakyushu and offers convenient public transportation access and many nearby hotels.

The main theme for IRC2016 KITAKYUSHU is “Innovation based on Basic Science.” We are expecting over 200 papers to be presented on special topics such as novel elastomeric materials, gel and related soft materials, progress in evaluation and testing methods, soft materials in automotive industry, elastomers for medical and human care, elastomers for environment and sustainability, innovative technology and goods in rubber industry as well as more general topics including polymer synthesis, natural rubber and related materials, blends and TPE, filler and additives, vulcanization, adhesion, structure-property and characterization, simulation, tire technology, fatigue and fracture, application of rubber and rubber processing, and others. In addition to lectures and presentations there will be an extensive technical exhibition showing the latest developments in the fields of raw and process materials, machinery, testing and analytical equipment, computer software for the rubber industry and so on.

It is the aim of IRC2016 KITAKYUSHU to promote world-wide exchange of knowledge and experience among colleagues. We are looking forward to your participation in this IRC in the form of contributing papers, taking part in the exhibition, and attending the conference. In addition to the scientific and technical program and the exhibition, all participants will be able to enjoy various social events.

All persons interested in the scientific and technological developments in the rubber and elastomer industry are encouraged to take this opportunity to attend the conference. Every effort has been made to ensure that all participants will have a thoroughly valuable and memorable stay in Kitakyushu. Your participation will most assuredly help to make this event a great success !

June 2015

A handwritten signature in black ink, appearing to read 'Y. Isono', with a stylized flourish at the end.

Yoshinobu ISONO
Organizing Committee Chair
IRC2016 KITAKYUSHU

INVITATION

Welcome to IRC 2016 Kitakyushu

The IRC 2016 will be held in Kitakyushu, Japan on October 24 (Mon.) – 28 (Fri.), 2016 under sponsorship of the Society of Rubber Science and Technology, Japan.

The scientific program will include plenary lectures, invited lectures, contributed papers and posters.

The conference is expected to make an important contribution to the advancement of rubber science and engineering, including industrial technology. Rubber scientists and engineers throughout the world are all cordially invited to the Conference.

CONFERENCE INFORMATION

Period: October 24 (Mon.) – 28 (Fri.), 2016

Venue: Kitakyushu International Conference Center

(3-8-1 Asano, Kokurakita-ku, Kitakyushu, Fukuoka, 802-0001, Japan)

Language: English

CALL FOR PAPERS

Scientists and engineers working in rubber and polymer fields are invited to submit papers on any of the selected topics. Accepted papers will be allocated for either oral or poster presentations.

Short abstracts of a maximum of 200 words can be submitted via Conference Website.

The deadline for the short abstract submission is **January 15, 2016**.

Authors will be notified of acceptance by February 29, 2016.

Abstracts will be submitted via Conference Website due by **April 30, 2016**.

Detailed instruction for abstract submission will be available on the website.

YOUR HOST CITY, KITAKYUSHU

The city of Kitakyushu is an environment and technology city with a population of one million people. Kitakyushu is a gateway to Asia due to its convenient location between Tokyo and Shanghai, and has grown as an industrial and international trade city. The city of Kitakyushu has overcome severe environmental pollution and became a green city with natural beauty and resources, and has been taking on the challenge of being pioneers to progress towards the creation of environmentally friendly and low-carbon society as an “Eco-Model City”. While Kitakyushu is the largest heavy-industry city in the Kyushu region, the city is clean and has many sightseeing spots, so that you can stay comfortably in Kitakyushu.



Conference Center

Exhibition Hall

Rihga Royal Hotel Kokura



Conference Center

PLENARY LECTURES

The following Plenary lectures will speak at the conference. The provisional presentation titles are as follows.

Rubber industry in Japan

President Tadanobu Nagumo

The Japan Rubber Manufacturers Association, Japan

The current status of rubber industry in Japan will be presented. Besides, business enterprises and technological development will be dealt with briefly.



Rubber is interesting!

Dr. Makoto Ida

Honda R&D Co., Ltd., Japan

Rubber is interesting materials having a lot of unique characteristics. And it may be said that most of particularly dynamic performance of the vehicles are established by the characteristic of these functional materials. Therefore, based on some examples, the unexpected characteristics of these materials and the interesting phenomena are introduced from the viewpoint of automobile research and development. With that in mind, the future and possibility of the rubber are surveyed.



Effect of inflation pressure loss rates on tire rolling resistance and vehicle fuel economy

Ph.D. Walter H. Waddell

ExxonMobil Chemical Company, USA

Tire inflation pressure loss rate (IPLR) values have now been measured for over 300 passenger car tire models purchased worldwide. Rolling resistance force and calculated coefficient (RRC) have been measured for over 80 passenger car tire models. RRC has also been measured as a function of decreasing tire inflation pressure in order to calculate the change in vehicle fuel economy when the tire loses air. Using current and projected data for the number of light vehicles in China, the average distance these vehicles are driven and the average number of liters consumed to drive 100 kilometers, the potential fuel savings is calculated as a function of tire IPLR. Since pneumatic tires continuously lose air due to diffusion through the rubber, calculations are based on re-inflating the tire at 3-month intervals. Corresponding increases in CO₂ emissions is estimated.



Progress in multi-scaled structure and related properties of elastomer nanocomposites explored by molecular dynamics simulation

Prof. Liquan Zhang

Beijing University of Chemical Technology, People's Republic of China

I will systematically present some important simulated results of elastomer nanocomposites (ENCs) via molecular dynamics simulation. First, we studied the dispersion and aggregation behavior of bare nanoparticles(NPs) with different geometries



such as spherical, sheet-like and rod-like on the molecular scale. Second, we probed the translational and relaxation dynamics at the chain and segmental length scales of the interfacial regions, hoping to elucidate whether “glassy polymer layers” exist around NPs. Third, we simulated the enhancement of the stress-strain and fracture toughness induced by NPs, providing a molecular reinforcing mechanism. Fourth, the “Payne effect” was examined, uncovering the underlying reason responsible for this non-linear behavior, and meanwhile how the introduced carbon nano-springs can effectively reduce the dynamic hysteresis of ENC is illustrated. Fifth, through simulation synthesis approach, we put forward a new and achievable approach to design and prepare a nanoparticle chemical network, with the NPs acting as “giant cross-linkers” or net points to chemically connect the dual end-groups of each polymer chain to form a network.

Natural rubber based research and developments in Indian rubber industry

Prof. Sabu Thomas

Mahatma Gandhi University, India

Being the 4th largest producer and 2nd largest consumer of natural rubber in the world the Indian Rubber Industry has been growing in along with the strength and importance, as a part of India's burgeoning role in the global economy. There are about 4600 registered units comprising of 30 large scale, 300 medium scale and around 4400 small scale and tiny units which form part of the colossus of the natural rubber industry in India. This shows the increased demand and production of rubber and rubber based products in India. The wide range of rubber products manufactured by the Indian rubber industry comprises of auto tyres, tubes, automobile parts, footwear, belting, hoses, cycle tyres and tubes, cables and wires, camelback, battery boxes, latex products, pharmaceutical goods, besides molded and extruded goods for mass consumption. The government promotes the development of the rubber industry in India, through research, services to growers and workers, manufacturing facilities, and other technical aids. The research fields in rubber industry also aims in developing high performance nanocomposites for various applications like green tyres, inner lining of the tyres with less permeability etc.



ORGANIZING COMMITTEE CHAIRPERSONS

Honorary Chairman

Tadanobu Nagumo
President, The Japan Rubber Manufacturers Association

Chairman of IRC2016 Kitakyushu

Yoshinobu Isono
Professor, Nagaoka University of Technology

Financial Committee

Keizo Akutagawa
Bridgestone Corp.

Program Committee

Toshikazu Takata
Tokyo Institute of Technology

Publicity Committee

Hiromu Saito
Tokyo University of Agriculture and Technology

Hospitality Committee

Tomonobu Shimizu
JSR Corp.

Local Arrangement Committee

Keiji Tanaka
Kyushu University

Exhibition Committee

Naoya Amino
Yokohama Rubber, Co., Ltd.

SCHEDULE AT A GLANCE

Date	AM	PM	Evening
Monday October 24		Registration	Welcome Reception
Tuesday October 25	Registration	Opening Ceremony / Plenary Lectures	
	Technical Exhibition		
Wednesday October 26	Oral Presentations	Oral Presentations	
	Technical Exhibition		
Thursday October 27	Oral Presentations	Excursion	Banquet
	Technical Exhibition		
Friday October 28	Oral Presentations	Oral Presentations	
	Technical Exhibition		

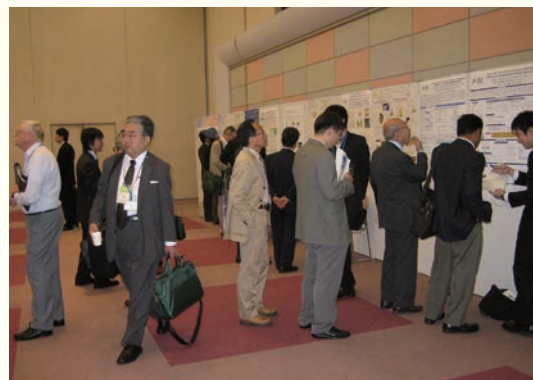
SCIENTIFIC PROGRAM

SPECIAL TOPICS

Novel Elastomeric Materials
 Gel and Related Soft Materials
 Progress in Evaluation and Testing Methods
 Soft Materials in Automobile Industry
 Elastomers for Medical and Human Care
 Elastomers for Environment and Sustainability
 Innovative Technology and Goods in Rubber Industry

GENERAL TOPICS

Polymer Synthesis
 Natural Rubber and Related Materials
 Blends and TPE
 Filler and Additives
 Vulcanization
 Adhesion
 Structure, Property and Characterization
 Simulation
 Technology of Tire
 Fatigue and Fracture
 Application of Rubber and Rubber Processing



IRC2005 Yokohama

SOCIAL PROGRAM

The organizing committee will arrange interesting and enjoyable social programs for the participants of the IRC2016 Kitakyushu to give special memories and cultural experience during your stay in Kitakyushu. Technical tours are planned. Detailed will be announced on our website.

IMPORTANT DATES

Application for Presentation January 15, 2016

Paper Submission April 30, 2016

Early bird Registration Deadline..... August 1, 2016

REGISTRATION

Registration should be made via online through the IRC2016 website.

	Early-bird rate (until August 1, 2016)	Regular rate (from August 2, 2016)
Participants	JPY 60,000	JPY 70,000
Students	JPY 10,000	JPY 15,000

Students are required to submit a photo copy of student ID.

ACCESS

VENUE: Kitakyushu International Conference Center

From JR Kokura Station – 5 min walk

From Kitakyushu Airport (KKJ) to Kokura Station ————— about 40 min by bus

From Fukuoka Airport (FUK) to Kokura Station ————— about 30 min by subway
and Bullet Train

From Narita Airport (NRT) to FUK ————— about 130 min by air

From Haneda Airport (HND) to KKJ ————— about 110 min by air

From Kansai Airport (KIX) to FUK ————— about 75 min by air

IRC2016 Kitakyushu

Organized by : The Society of Rubber Science and Technology, Japan

Co-Organized by : Kitakyushu city (applied)

Supported by : Science Council of Japan

Japan Society for the Promotion of Science

The Society of Rubber Science and Technology, Japan

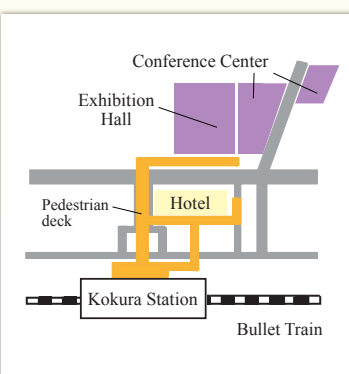
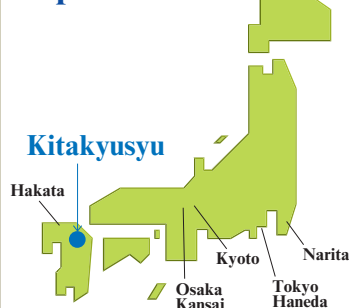
Tobu Bldg., 1-5-26 Moto-akasaka, Minato-ku, Tokyo 107-0051, Japan

E-mail: srij@srij.or.jp

Website <http://www.irc2016.com/>

Visit our conference website regularly for the latest program updates
and more detailed information.

Japan



Kokura Castle



Old Moji Mitsui Club



Hiraodai



Iron Tree

RUBBER & ELASTOMER TECHNICAL EXHIBITION

A technical exhibition will be held at the meeting site, during the Conference, displaying new materials and products, manufacturing machinery, processing facilities, and testing equipment.

Objective: This exhibition aims to promote the development and international exchange of rubber and elastomer industries and to contribute to create its future vision through exhibiting the forefront technologies and products, during the 2016 International Rubber Conference.

Theme: Sustainable Technology Innovation for Tomorrow

Scope of Exhibits:

- (1) Raw materials (e.g. rubber, elastomer, chemicals, filling materials, carbon black, fibers, and metal materials)
- (2) Rubber and elastomer related products
- (3) Processing machinery
- (4) Testing and measuring equipment
- (5) Advanced technology and related products
- (6) Resource saving and recycling related products
- (7) Information (books, documents, and materials)
- (8) Other

Exhibition Fee/Booth Size: JPY 300,000 per one package booth (tax excluded)

* Package booth is 9 m² (3m×3m) wide and includes PVC system panels and 500W power supply.

Schedule: Around July 2015 Exhibitor Prospectus distribution
 Booth application will be started
 Around June 2016 Deadline for booth application
 (If the number of applications reaches the upper limit, applications will be closed before the deadline. Please note that application is “first-come-first-served” basis)
 Around July 2016 Exhibitor Briefing will be held

Please visit our website regularly for more detailed information.

<http://www.irc2016.com/>

