

#### **EFRC** Members

Anderol BV

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**Ariel Corporation** 

Ateliers François SA

**BASF SE** 

BORSIG ZM Compression GmbH

Burckhardt Compression AG

Burckhardt Components AG

Compressor Products International GmbH

CompressorTech Two

COOK COMPRESSION

C.S.T. Compression Service Technology S.r.l.

Dott. Ing. Mario Cozzani S.r.l.

DRESSER-RAND Company Ltd.

Dynaflow Research Group BV

GE Measurement and Control Solutions Italia S.r.l.

GE Oil & Gas NUOVO PIGNONE S.p.A

GE Oil & Gas, Reciprocating Compressors

HOERBIGER Kompressortechnik Holding GmbH

Howden Thomassen Compressors B.V.

ITW / EMHA BV

J.P. Sauer & Sohn Maschinenbau GmbH

KÖTTER Consulting Engineers GmbH & Co. KG

Leobersdorfer Maschinenfabrik GmbH & Co. KG

LONZA AG

Mehrer Compression GmbH

Nederlands Aardolie Maatschappij B.V.

NFUMAN & ESSER GmbH & Co. KG.

PROGNOST Systems GmbH

PSE-Engineering GmbH

Repsol S.A.

RWE Gas Storage s.r.o.

RWTH Aachen University, Institute for Combustion Engines

SAFE S.P.A.

SHELL Global Solutions International BV

SIAD Macchine Impianti S.p.A.

SKF Solution Factory - Marine Services B.V.

Southwest Research Insitute

STASSKOL GmbH

TNO Science and Industry

TU Dresden, Bitzer Chair of Refrigeration, Cryogenics and Compressor Technology

TU Wien, Institute of Fluid Mechanics and Heat Tansfer

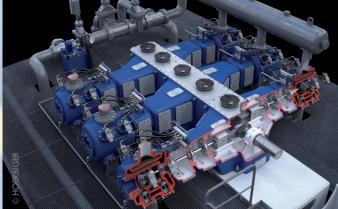
TOTAL Refining and Chemicals

Wärtsilä Finland Oy

Wentzel Dynamics

Windrock Incorporated

# **European Forum for Reciprocating Compressors**



# **Student Workshop**

sponsored by EFRC\* June 14-17, 2016

Germany / Switzerland

Gain an insight into reciprocating compressor technology!
And win an attractive price!

\*This Student Workshop sponsored by EFRC is cost-free for participants.



#### Who we are

#### The EFRC Organisation

The European Forum for Reciprocating Compressors was founded in June 1999 as a non-profit association to support European users, manufacturers and scientists working with reciprocating compressors in terms of technology, exchange of experience, formation and enforcement of standards and precompetitive research.

#### **Our Background**

The increasing demand for economic plant operation has led to a critical discussion of the equipment as to selection, design, maintenance and automation. The well-known advantages of the reciprocating compressor – high efficiency in many different operating conditions, comparatively easy regulation possibilities, suitability for light gases, high compression ratios, and many more – have led to a renaissance of this type of machinery.

#### **Our Goals are**

#### **Exchange of Information and Experience**

The EFRC acts as a 'forum of ideas' providing scientists and engineers the opportunity to spread new ideas or to carry them out. The end users in their turn can take the opportunity to report on their experience with the reciprocating compressor and to request the industry concerned for solutions to problems.

Improve the Image of Reciprocating Compressors
It will be shown that reciprocating compressors meet all
the requirements of modern machines and even create new
possibilities.

#### Improved Specifications and Standards

The forum will also offer an opportunity for constructive criticism concerning the internationally used US standards. The aim should be to provide an interpretation and improvement of the above regulations adapting them to modern experience and specific European needs.

### **Programme**

#### Day One: June 14, 2016

10:00 Arrival of the Students at
Mehrer Compression GmbH (OEM)
Lecture: "Fundamentals of Thermodynamics"
Lecture: "Fundamentals of Reciprocating Compressors"
Plant Tour
Night Stop in Balingen, Germany

#### Day Two: June 15, 2016

Transfer to Grafenhausen, Germany Visit of Rothaus Brewery / CO2 Compressor Transfer Night Stop to Winterthur, Switzerland

#### Day Three: June 16, 2016

Visit at Burckhardt Compression AG (OEM)
Lecture: "Compressor Wear Parts - Valves, R&P and
Compressor Mechatronics"
Lecture: "Hyper Compression - fundamentals"
Plant Tour
Night Stop in Winterthur, Switzerland

#### **Day Four: June 17, 2016**

Visit at Lonza AG

Lecture: "The Role of the Reciprocating Compressor in the Chemical Industry and @Lonza"

Lecture: "Pulsations and Vibrations on Reciprocating Compressors"

Plant Tour

Handover of EFRC Workshop Task

15:00 End of EFRC Student Workshop
Transfer to Airport / Trainstation

# Win a price!

At the end of the workshop all participants will get a challenging task to solve.

Closing date is two weeks later on July 1, 2016.

The owner of the best solution will win an attractive price.

# Want to take part?

Use this great opportunity and register as soon as possible as space is limited and fills up quickly.

Please, send your application to Mrs. Maja Schütz via email: contact@recip.org.
European Forum for Reciprocating Compressors e. V. c/o Technische Universität Dresden, 01062 Dresden

Participants will be selected by the EFRC Student Workshop Committee.



'This Student Workshop sponsored by EFRC – European Forum of Reciprocating Compressors – is cost-free for participants. It includes accommodation, food and travelling expenses, each student gets a max. refund of EUR 300.- for the transfer to Balingen, Germany and back home from Visp, Switzerland.