



Welcome to Our KSU-MPQ-LMU COLLABORATION

Abdallah Azzeer
Attosecond Science Laboratory Director
King Saud University
Riyadh



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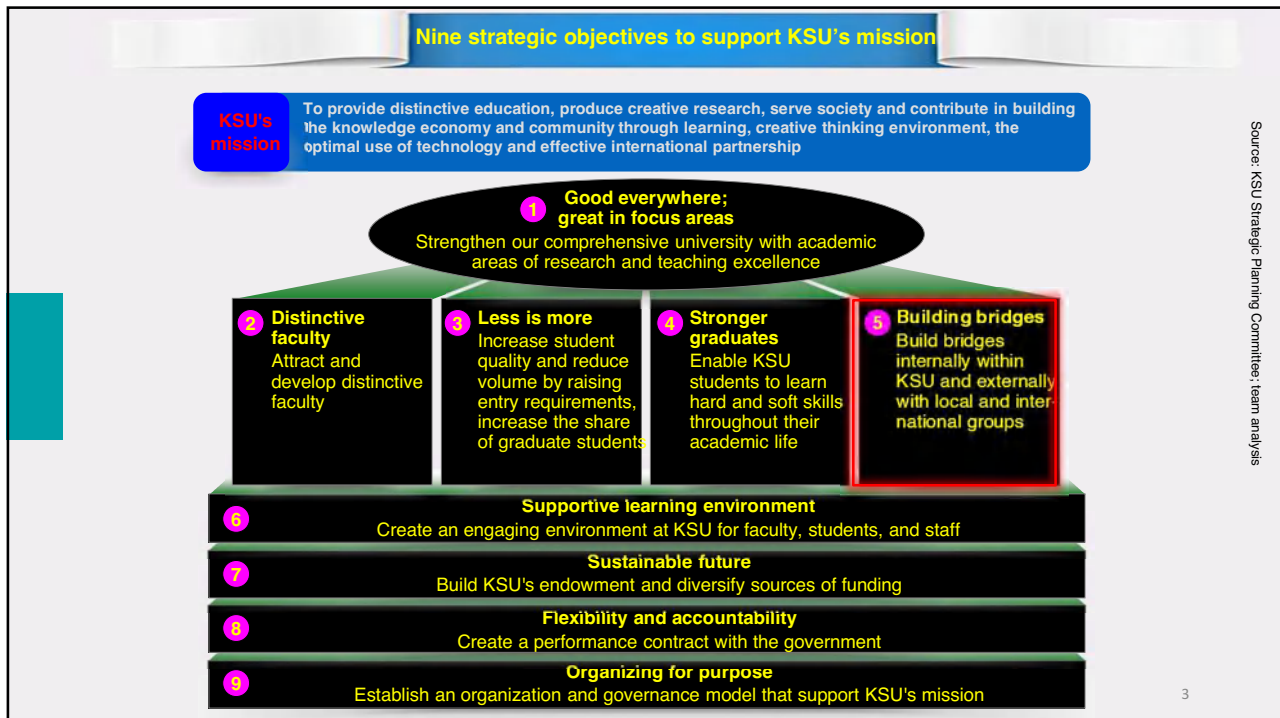
INTRODUCTION

According to KSU strategic plan 2030, one of their pillars is to build bridges with international groups. King Saud University, established in 2008 a Satellite Lab, through the International Twinning Program, in conjunction with the Max Planck Institute for Quantum Optics (MPQ) and the Ludwig-Maximilians Universität (LMU) in Germany, to activate the joint research collaboration in the field of very advanced laser research and its applications, and take advantage of the excellent infrastructure and global expertise.



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The MPQ-KSU-LMU Collaboration facilitates the partners to establish forefront research and education in one of the key technologies of the 21st century, photonics.

2008- Photonics, the science and technology of laser light and its widespread applications, belongs to the fastest growing and developing technologies of the 21st century.

The partners are currently establishing a world-class Attosecond Science laboratory (ASL) at KSU where outstanding senior and young scientists will work together on the development and application of novel radiation sources for coherent ultrashort intense light pulses. The ASL is considered to be the first of its kind in the Arab world.

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VISION

The Laser Physics department from the Ludwig-Maximilians-Universität München (LMU) and the Max Planck Institute of Quantum Optics (MPQ) have an ongoing collaboration with the King Saud University (KSU) in Riyadh.

2008-

It is this very collaboration that has enabled the establishment of the Attosecond Science Laboratory (ASL) at the KSU — bringing with it the capacity to generate ultrashort pulses of light, lasting just a few billionths of a billionth of a second, that can image otherwise invisible electrons within atoms.

While the ASL is the first of its kind in the Arab world, the aims of this collaboration have moved beyond education and basic research — directly bringing together novel attosecond and femtosecond sciences with molecular sciences to devise new ways of early cancer detection.

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MISSION

The mission of this international, inter-disciplinary collaboration is multifaceted:"

2008-

- Exploring the ultimate frontiers of ultrafast (nano-) electronics and electron-based information processing and identifying viable routes to approaching these frontiers.
- Development of new ways of non-invasive early cancer detection with laser-based infrared molecular fingerprinting (ECDL).

Our collaboration is bringing together expertise from different backgrounds, as well as providing grounds for intercultural exchange between European and Arab cultures. We are joining forces in the education of top-rated talent and devising new ways of facilitating excellence in scientific research, higher education and community service.

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History of the KSU-LMU- MPQ Collaboration

2007-



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28-29 October 2007



KSU rector- Theodor W. Hänsch- Sign the collaboration



2007

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19 JAN 2008




Minster of HE-KSU rector- MPQ- Sign MOU with MPQ




2008

2007

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7 April 2008




Prof. Krausz visit KSU, meet KSU rector and gave a lecture at Phys & Astro. Dept.




2008

2007

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24-27 Aug 2008




Prof. Azzeer visit MPQ




2008

2007

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20 Nov 2008



King Saud University (KSU)
(Riyadh, Kingdom of Saudi Arabia)
&
Max Planck Institute of Quantum Optics (MPQ)
(Garching, Federal Republic of Germany)

Cordially invites you for opening the satellite office at MPQ
(MPQ & KSU Nobel Program Collaboration)

On Thursday, November 20th, 2008 at 10:30 AM
at
Max-Planck-Institut für Quantenoptik
Hans-Kopfermann-Str. 1
D-85748 Garching (bei München), Germany

Please confirm your participation to phone
Tel: +49(0)89-32905-194 - Fax: +49(0)89-32905-200
E-mail: bayla.bahmed@mpq.mpg.de





Kingdom of Saudi Arabia
P.O. Box 24555 - Riyadh 11456
Tel: +966-1-467 65 17
Fax: +966-1-467 36 56
Satellite Office in MPQ
Tel: +49(0)89-32905-754
Fax: +49(0)89-32905-200
mpq_ksu@t-online.de
mpq_ksu@hotmail.com



Invitation

Invitation for opening the KSU satellite office at MPQ

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KSU-MPQ Collaboration News at different wepages

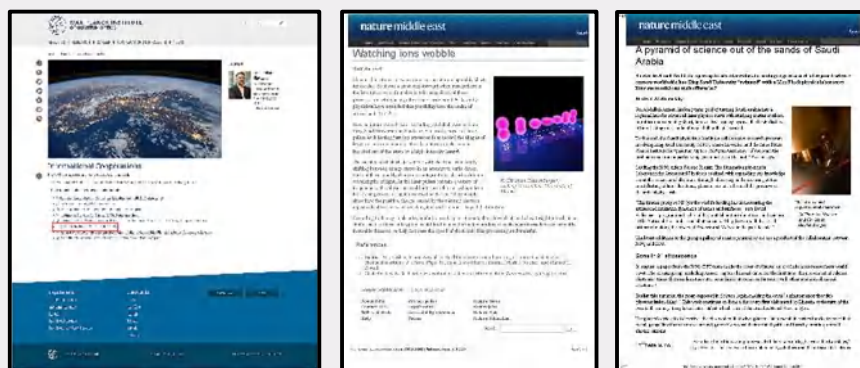


2008
2007

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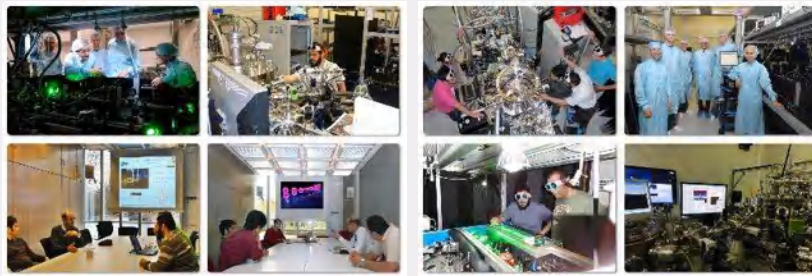
KSU-MPQ Collaboration News



2008
2007

16

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The KSU research team participated in research and experiments with the MPQ team during several visits to the laboratories at MPQ.

2008 -
2008
2007



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يسر
معمل الأبحاث عن بعد (ستلايت لاب)
التابع لجامعة الملك سعود
بمعهد ماكس بلانك للبصريات الكمية بألمانيا
عن البدء بقبول طلاب الراغبين في التقديم على
برنامج الدكتوراه
تخصص الفوتونيات

وعلى المتقدمين إرسال السيرة الذاتية و تعبئة
النموذج الموجود على الموقع
<http://faculty.ksu.edu.sa/zalahmed/mpq-ksu>

الى الإيميل:
zalahmed@ksu.edu.sa



<http://www.ksu.edu.sa>



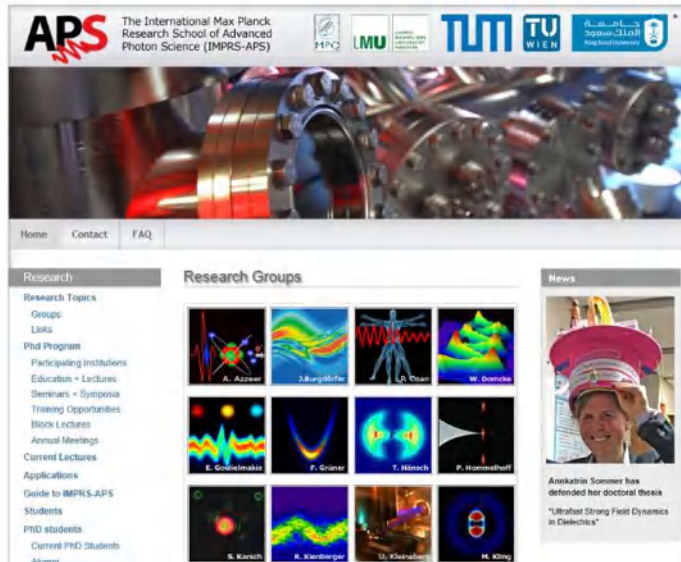
2009

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Establish a research group for KSU in The International Max Planck Research School on Advanced Photon Science (IMPRS-APS). IMPRS-APS was established as a collaboration of the (LMU) and (TUM) in partnership with (MPQ) and in association with (VUT).

<http://www2.mpg.mpg.de/APS/>



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Prof. T. Hänsch
Prof. F. Krausz
Prof. M. Kling
Prof. U. Kleineberg
Dr. M. Schultze
Dr. I. Pupeza
Dr. N. Kling
Dr. N. Karpowicz
Dr. A. Schiffrin



Prof. Theodor Hänsch, Prof. F. Krausz and the research team of MPQ-KSU collaboration delivers several specialized lectures to staff and students of KSU.



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Summer training for 26 students from College of Engineering and college of science at KSU for two months in laboratories of MPQ.



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Prof. Azzeer was an External examiner for PhD degree at LMU



Prof. Azzeer was an external examiner for PhD degree at LMU (11-7-2011) & (5-5-2017).



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11-12 Nov 2013



KSU visit MPQ and LMU
KSU president and LMU president signed MOU.



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Professor Ferenc Krausz - Co-Winner of the KFIP (Science) 2013

Speech by Professor Ferenc Krausz during KFIP ceremony







<https://www.youtube.com/watch?v=yKTaAnSQuF0>



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LMU-MPQ-KSU-Collaboration


Signing of the first research cooperation between MPQ and KSU in November 2009.





Microband mirrors compress laser pulses to a duration compatible with the laser period. The resultant near single cycle laser pulses are used to generate attosecond pulses in the Attosecond Science Laboratory.



Visit by the KSU delegation led by the excellency, Rector Dr. Badran Al Omair at the Max Planck Institute of Quantum Optics in Garching (November 2013).

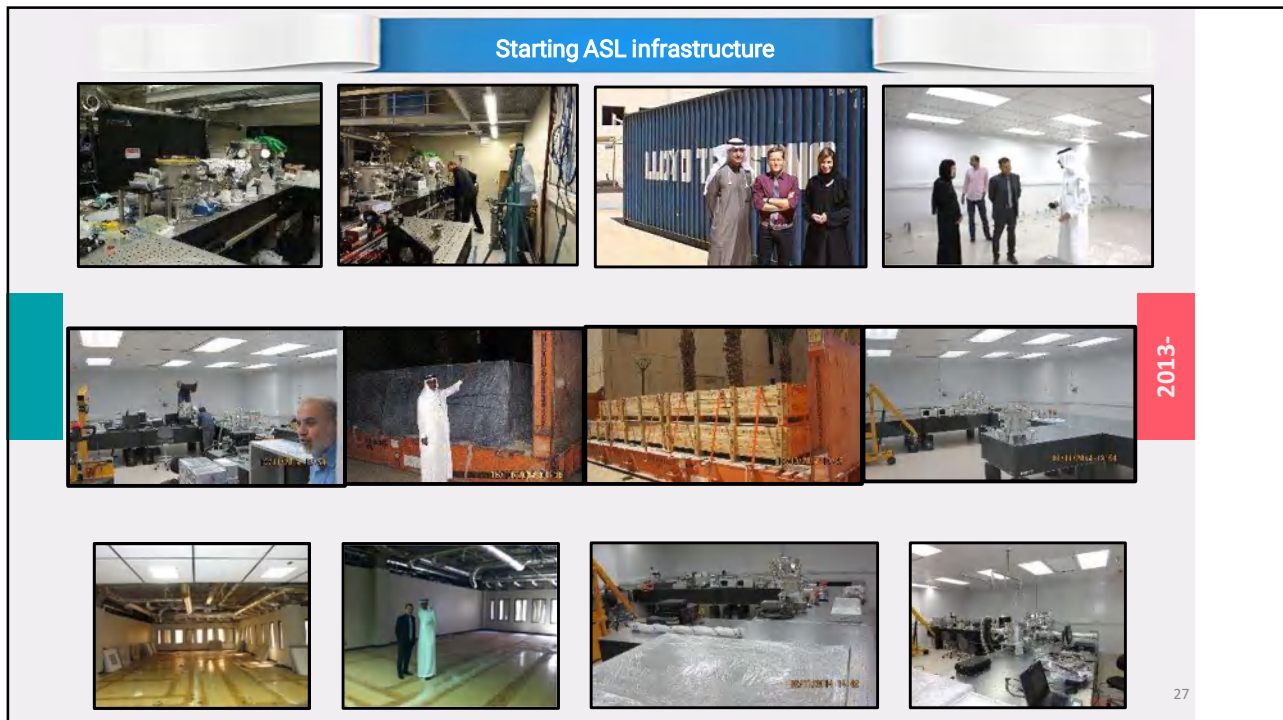


Signing of the memorandum of understanding between KSU and LMU by their excellencies Dr. Badran Al Omair and Prof. Bernd Huber (November 2013).

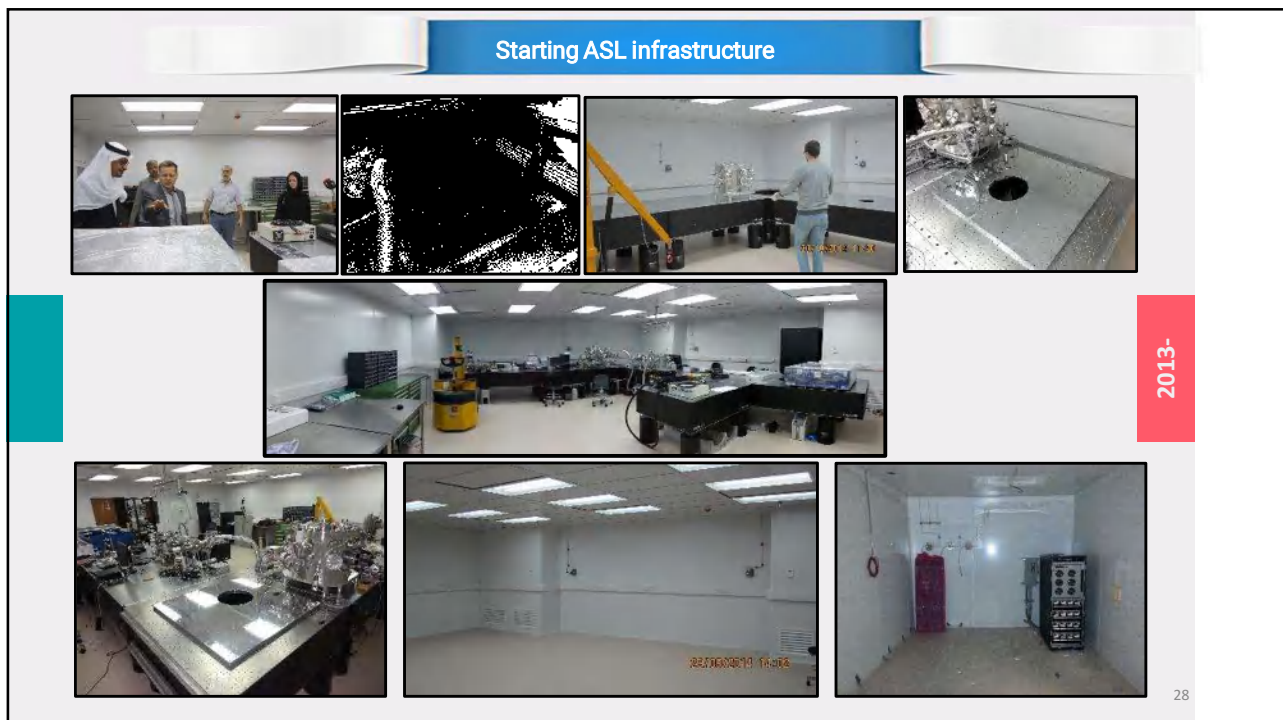



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EARLY CANCER DETECTION WITH LASERS

Lasers 4 Life
وبالليزر حياة

2014 -

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We are not going to take a real steps forward if we are not willing to engage with the unknown

<https://www.attoworld.sa/>

ECDL-KSU Team	ECDL-LMU_MPQ Team
Abdallah Azzeer	Ferenc Krausz
Jean-Marc Nabholz	Mihaela Zigman
Khalid Al Saleh	Ioachim Pupeza
Meshaal Alharbi	Alexander Apolonskiy
Ayman Alismail	Matthias Kling
Roberto Incitti	Marinus Huber
	Michael Trubetskov
	Wolfgang Schweinberger
	Syed A. Hussain
	Christina Hofer
	Kilian Fritsch
	Markus Pötzlberger
	Lenard Vamos
	Nicholas Karpowicz
	Vladimir Pervak
	Oleg Pronin

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Invitation for ASL opening ceremony at KSU



2015

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16 Feb 2015

ASL Opening Ceremony

Excellency Prof. Dr. Badran Al-Omar,
The University's Rector,



Prof. Dr. Ahmed Alamri
Vice Rector for Graduate Studies
and Scientific Research

2015



- Prof. Dr. Theodor W. Hänsch
2005 Nobel Prize in Physics
- Prof. Dr. Paul Bruce Corkum
2013 King Faisal Prize for Physics,
Joint Laboratory for Attosecond Science
- Prof. Dr. Ferenc Krausz
2013 King Faisal Prize for Physics,
Director of The Max Planck Institute of Quantum Optics
- Prof. Dr. Gérard Mourou
Director of IZEST (International Zettawatt Exawatt Science and Technology)
- German Ambassador to the Kingdom of Saudi Arabia Mr. Boris Ruge



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16 Feb 2015

ASL Opening Ceremony

Speech by Professor Ferenc Krausz during ASL opening ceremony




2015

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16 Feb 2015

ASL Opening Ceremony



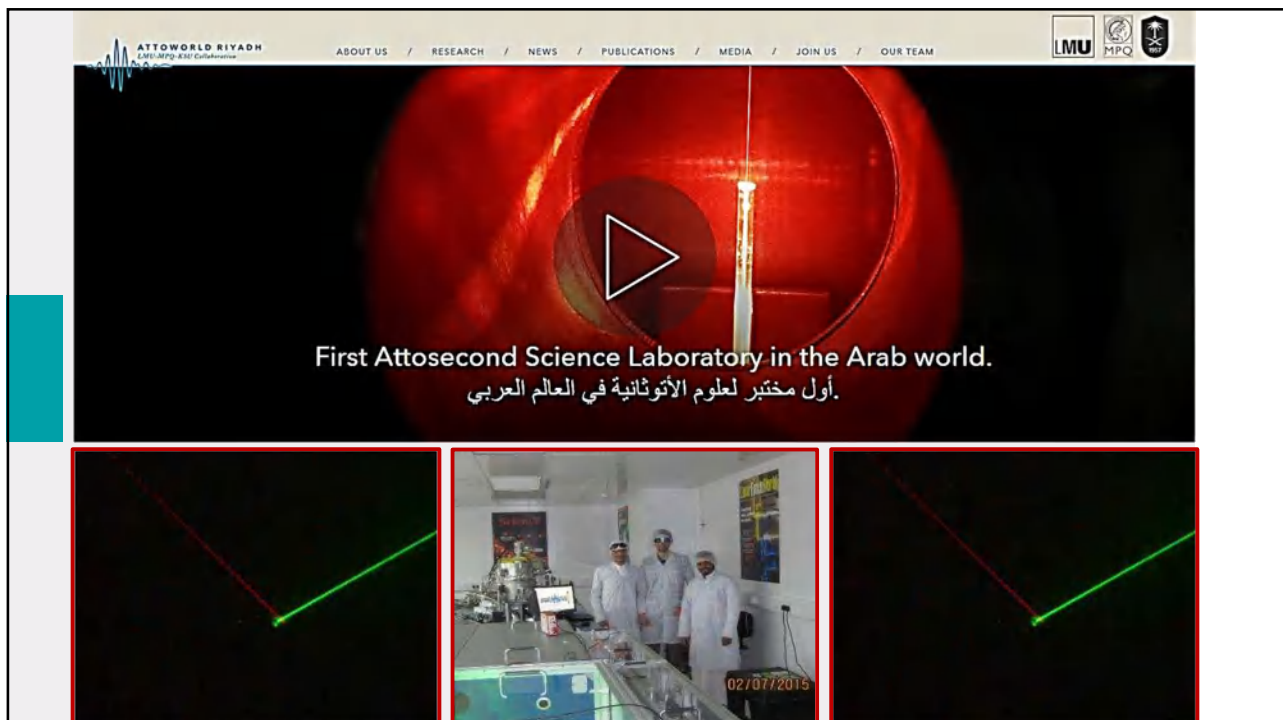
2015

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2015

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Articles about some ASL Activities

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Articles about some ASL Activities

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3

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5

1- Franziska Elisabeth Hoß Bachelor Thesis about KSU/MPQ collaboration

2- Post from Dr. Nora Kling & Dr. W. Schweinberger

3- Nature Middle East article about Melanin

4- Fist isolated AS in Saudi Arabia

5- Studying German — in the Kingdom and in Germany —Saudi Gazette

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MPQ-LMU postdoc and graduate students worked at ASL

Dr. H. Schweinberger

Dr. Shubhadeep Biswas

Dr. Johannes Schotz

Dr. Nora Kling

Dr. Benjamin Forg

Christian Burger

Clemens Jakubeit

Philipp Rupp

Sambit Mitra

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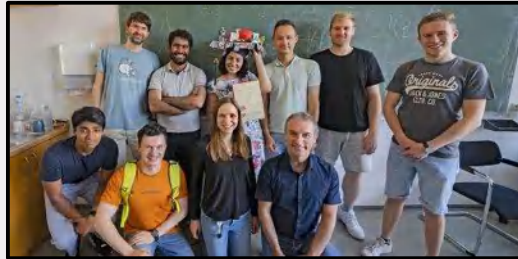
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Two KSU PhD students graduated from LMU/MPQ

congratulations to Dr. Ayman Alismail



congratulations to Dr. Najd Altwaijry



PhD student did part of his experiment at LMU/MPQ Labs

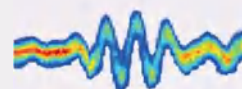
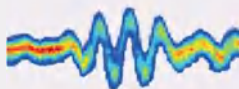


MSC student did here experiment at LMU/MPQ Labs

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ASL present at KSU Scientific Research Forum exhibition (18-22/22018)



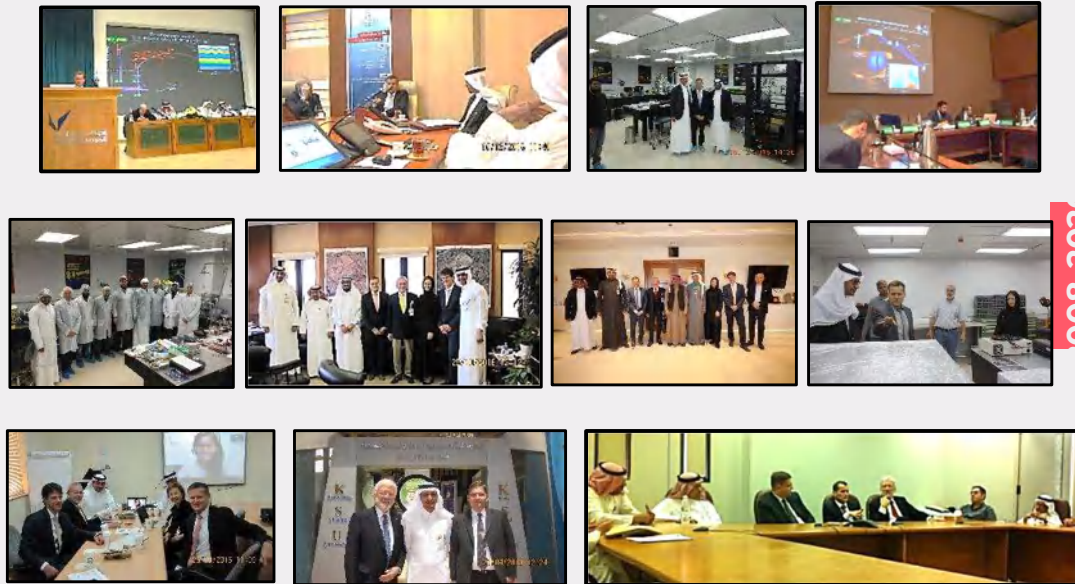
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Prof. Krausz visits KSU several times since 2008-



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Some ASL visitors




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WE ARE APART OF ATTOWORLD

Ludwig Maximilian University of Munich (LMU)
Max-Planck-Institute of Quantum Optics (MPQ)




ATTOWORLD
OUR VISION • RESEARCH • NEWS • PUBLICATIONS • TEAM • CONTACT

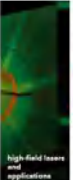
associated groups




Femtochemistry




Field-resolved pump spectroscopy



High-field lasers and applications



Free-ion acceleration




Ultrafast x-ray physics

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associated groups


Attosecond Science Laboratory




ASL is strongly interested in new applications of photonics, especially in the medical field. It aims to become a center of excellence, making a strong impact on the local and regional level, while ensuring the recognition of international scientific organizations.


APPLIED RESEARCH — Our focused attosecond pump-probe system combines light emitting in conjunction with controlled free electron laser sources for time and to realize the detection of emerging materials. Our own dimensionally reduced materials and organic semiconductor media become light field mediators for the development of novel attosecond spectroscopic devices. Recent studies of high-order harmonic generation in organic semiconductor films have been investigated in parallel, we are combining a novel hybrid configuration between femtosecond and X-ray FEL and X-ray FEL using a sub-femtosecond field structure. Investigation of electron transfer for chemical and biological systems of interest, based on samples collected at FEL and in clinical studies coordinated by FEL.

WEBSITE





Max-Planck-Institut für Quantenoptik
Max-Planck-Gesellschaft



[illegible]

ACHIEVEMENT AND PARTICIPATION

	TYPE OF ACHIEVEMENT AND PARTICIPATION	
1	GROUP MEMBERS FROM KSU	Phys. Dept. (4) –Medicine Coll. (4)
	TEACHING ASSISTANTS	Phys. Dept. (2)
	MEMBERS FROM OUTSIDE KSU	KACST (2)
2	PUBLISHED RESEARCH PAPERS:	35
3	CONFERENCES	20
4	WORKSHOPS & SYMPOSIA	12
5	LECTURES BY MPQ/LMU TEAM AT KSU	23
6	TRAINING SAUDI MALE AND FEMALE STUDENTS IN THE LABORATORIES OF MPQ/LMU	26
7	DOCTORAL AND POST-DOCTORAL STUDENTS WHO WORKED IIN ASL (FROM THE GERMAN SIDE)	7
8	GRADUATE STUDENT FROM KSU WORKED FOR THE DEGREE OF PHD & FOR PART OF THEIR EXPERIMENT AT MPQ/LMU	3

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Any success in this fruitful cooperation over years behind it many people, I must to say thank you all:



Leaders of KSU, MPQ, LMU



Prof. Ferenc Krausz, Prof. T. Hänsch, Prof. M. Kling, Dr. M. Žigman



T. Naeser and all the team (management & researcher) at KSU, LMU, MPQ



Dr. M. Alharbi, Dr. A. Alismail from KSU

رؤية
2030
الجامعة العربية السعودية
العلمية

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