

Conference Frontiers of Quantum and Mesoscopic Thermodynamics 2017

Public Lecture of John Pendry with Concert

Dvořák's Hall of Rudolfinum
Wednesday July 12, 2017

19:00 – 19:15	Music introduction Opening address
19:15 – 20:15	John Pendry: “Metamaterials & the Science of Invisibility”
20:15 – 20:30	Discussion
20:30 – 20:45	Break
20:45 – 22:00	Concert

Music Introduction

J. Kšica

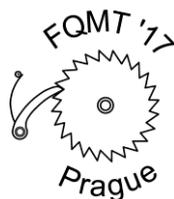
J. Fišer (trumpet)

M. Kejmar (trumpet, flugelhorn)

J. Kšica (organ)

M. Misár (trumpet)

Fanfares of light



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“Metamaterials & the Science of Invisibility”

John Pendry

Blackett Laboratory, Imperial College, London, United Kingdom

In the last decade a new area of research has emerged as a result of our ability to produce materials with entirely novel electromagnetic properties. Known as metamaterials because they take us beyond the properties of conventional materials, they display remarkable effects not found in nature, such as negative refraction. Spurred on by these new opportunities, theorists have produced exotic concepts that exploit the new materials: we can now specify how to make a lens whose resolution is limited not by the laws of nature but only by our ability to build to the stated specifications; we can guide radiation along a trajectory, avoiding objects and causing them to appear invisible; we can design and manufacture materials that are active magnetically in the optical range. There has been a truly amazing amount of innovation but more is yet to come. The field of metamaterials is developing into a highly disruptive technology for a plethora of applications where control over light (or more generally electromagnetic radiation) is crucial, amongst them telecommunications, solar energy harvesting, stealth, biological imaging and sensing, and medical diagnostics.

John Pendry

John Pendry works at Imperial College London. He researches electromagnetic ‘metamaterials’ whose properties owe more to their micro-structure than to the constituent materials and make accessible completely novel materials with properties not found in nature. Successively metamaterials with negative electrical permittivity, then with negative magnetic permeability were designed and constructed. In 2006, collaborating with Duke University, he deployed the technique of ‘transformation optics’ to design a cloak to hide an arbitrary objects from electromagnetic fields. The simplicity of the new concepts together with their radical consequences have caught the imagination of the world’s media generating much positive publicity for science in general.

Program of the concert

J. S. Bach (1685 – 1750)
P. Kšica (organ)

Preludium and Fugue
from Te Deum

J. Clarke (1674 – 1707)
M. Kejmar (piccolo trumpet)
P. Kšica (organ)

Prince of Denmark's March

G. F. Handel (1685 – 1759)
M. Kejmar (flugelhorn)
P. Kšica (organ)

Aria

H. Purcell (1659 – 1695)
M. Kejmar (flugelhorn)
P. Kšica (organ)

Air

H. Purcell (1659 – 1695)
M. Kejmar (flugelhorn)
P. Kšica (organ)

Lilliburlero

A. Vivaldi (1678 – 1741)
M. Kejmar (flugelhorn)
P. Kšica (organ)

Largo from Winter
(from Four Seasons)

J. Kšica
J. Kšica (piano)

Aria Pragensis per fortepiano
solo

A. Dvořák (1841 – 1904)
T. Víšek (piano)

Suite in A major, Op. 98
I. Moderato, II. Molto vivace

B. A. Wiedermann (1883 – 1951)
P. Kšica (organ)

Toccata and Fugue in F minor

A. Rubinstein (1829 – 1894)
M. Kejmar (flugelhorn)
J. Kšica (organ)

Melody in F

E. Garner (1923 – 1977)
M. Kejmar (flugelhorn)
J. Kšica (organ)

Misty

V. Trojan (1907 – 1983)
I. Fleischhansová-Butler (violin)
T. Víšek (piano)

R. Quilter (1877 – 1953)
I. Fleischhansová-Butler (violin)
T. Víšek (piano)

L. Bernstein (1918 – 1990)
M. Kejmar (flugelhorn)
J. Kšica (organ)

L. Bernstein (1918 – 1990)
M. Kejmar (flugelhorn)
J. Kšica (organ)

Italian Anonymous (17th century)
J. Hlaváč (alt saxophone)

J. Hlaváč
J. Hlaváč (soprano saxophone)
M. Kejmar (trumpet)
J. Kšica (piano)

The Emperor's Nightingale

Drink to my eyes
Three poor mariners

Maria
from West Side Story

Tonight
from West Side Story

Melody

Homage to London

Performers

Iva Fleischhansová-Butler (violin)

Iva Fleischhansová studied in Prague at the Academy of Performing Arts with Nora Grumliková. In 1994, Iva moved to the UK for her postgraduate studies at the Royal Northern College of Music in Manchester with Lydia Mordkovich. Fired with enthusiasm for period performance, she also studied with Pauline Nobes and Andrew Manze. While in Prague, Iva was a co-leader of the Suk Chamber Orchestra and a member of the Talich Chamber Orchestra. Since her settling in the UK she has worked with Manchester Camerata, the Royal Liverpool Philharmonic Orchestra, the London Festival Orchestra, the Orchestra of the Age of Enlightenment, the London Classical Players, the Academy of Ancient Music, the Sixteen and others and toured with them extensively in Europe, America and Japan. She regularly performs with the renowned Czech pianist Tomáš Víšek, in a violin duo with her husband Mark Butler, the Lux Ensemble, and the Bosch Quartet. She has also made recordings for BBC films and for Czech Radio. Iva is sought after as a leader in community orchestras. She currently leads the Orchestra da Chiesa with which she performed Mahler's Eighth Symphony in 2015. Iva also enjoys teaching violin and musical skills to very young children as a Colourstrings teacher.

Jiří Hlaváč (saxophone)

Jiří Hlaváč graduated from the Academy of Performing Arts in Prague (Professor Říha). He is known primarily as a fine instrumentalist who has excelled as a soloist of various classical and contemporary works, showing not only his brilliant technical virtuosity but also his unique sense of the instruments range of color. He has played as a soloist with many ensembles over the world. He is a holder of the Golden Shield Award, Grammy Classic, Title "Man of the Year", and award from the ABI (American Biographical Institute). Jiří Hlaváč also pays his attention to organizational work. He is a founder and an art director of specially orientated chamber ensemble which, under the name Barock Jazz Quintet, has over the years performed both standard jazz works and compositions by 20th century composers as Aaron Copland, Igor Stravinsky, Darius Milhaud and Leonard Bernstein. His broad range of activities is complemented by his endeavors to popularize music and to organize musical events. He is chairman of The Committee of the International Radio Competition for Young Musicians Concertino Praga and chairman of The Prague Spring International Music Competition. He also devotes his time to pedagogical work: Jiří Hlaváč is a Professor at the Music faculty of The Academy of Performing Arts in Prague where, he was dean from 2000 till 2006. Apart from teaching in Prague, he also often participates as a teacher at international courses and master classes throughout the world.

Miroslav Kejmar (flugelhorn, trumpet)

Miroslav Kejmar graduated from The Prague Conservatory after studies with Professor Junek. He then studied in the class of Professor Václav Pařík at The Prague Academy

of Arts. Already during his studies at The Academy of Arts in Prague, he played in various orchestras, e.g. in the Film Symphony Orchestra and the Czech Philharmonic Orchestra. Apart from guest appearing with several chamber brass ensembles, he works on a permanent basis with the Prague Brass Soloists, of which is a founding member. His career as a soloist is equally wide-ranging. He is well known to audiences in many European countries, as well as Japan. Apart from classical music, he is also interested in dance, jazz and popular music. For about three years he played in the orchestra involved in the famous musical, Jesus Christ Superstar. He was a member of the Karel Vlach orchestra. Miroslav Kejmar was, over thirty years, the first trumpeter of the Czech Philharmonic Orchestra, and played many years with the "Ten of the Best" ensemble, the famous international group of trumpeters. He nowadays plays frequently as a soloist; he is a member of the Prague Brass Soloists and Czech Philharmonic Brass ensembles.

Josef Kšica (organ, piano)

Josef Kšica studied organ at the Conservatory in Brno and at the Academy of Performing Arts in Prague in the class of professors Milan Šlechta and Jiřina Pokorná. In addition, he studied composition with Professor Jan Duchoň. After many years of practicing as an organist and a singer of Czech leading choirs (Prague Philharmonic Choir, Prague Chamber Choir) Mr. Kšica became the choirmaster in St. Vitus Cathedral in Prague. Beside these activities, he performs old Czech as well as world sacred music, occasionally in new premieres. He also cooperated with the specialist on Bach music, Professor H. Rilling. As an organist, Mr. Kšica has been performing at concerts in his country and abroad. He has also been increasingly seen on the stage as a conductor. Aside from his interpretation achievements, Josef Kšica is a well-known scholar and editor for many European archives. *Ars Instrumentalis Pragensis*, in particular, is grateful to him for his continued broadening of their repertoire.

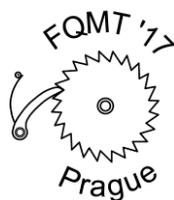
Přemysl Kšica (organ)

Přemysl Kšica graduated from the Prague Conservatory (organ, the class of Professor Popelka). He continued his studies of organ at the Academy of Music Arts in Prague and Staatliche Hochschule für Musik und Darstellende Kunst in Stuttgart with Professor Ludger Lohmann. He studied also organ improvisation with Professors Jaroslav Vodrážka, Jaroslav Tůma and Johannes Mayr. Přemysl Kšica won numerous prizes in Czech and international organ competitions. He plays regularly in Prague churches, especially in the Church of Our Lady of the Snow. He has been performing at many concerts in his country and abroad.

Tomáš Víšek (piano)

Tomáš Víšek developed his carrier as a solo pianist after graduating from the Prague Conservatory (Professors V. Kameníková and Z. Kožina), and from the Academy of Music Arts in the class of Professors J. Páleníček and Z. Jílek. He has established his reputation performing both famous and lesser known repertoire, some of which being undeservedly neglected. He has toured throughout the world including Austria, Holland, Switzerland, France, Italy, Egypt, Japan, USA, and has made recordings for

radio and television and on CDs. Tomáš Víšek won numerous prizes in international competitions (Hradec Králové, Vienna, Ragusa, Paris), in 2013 he won the 1st prize and CMF Prix at the “Concours Musical de France” in Paris, in 2015 the 1st prize at the competitions „Music Without Limits“ (Druskininkai) and „Grand Prize Virtuoso“ (video-competition), in 2016 he won the 1st prize at the „International Master Competition for Music Teachers“ in Warsaw. His solo recital in the Prague Spring Festival in 1997 and the further performances there in 2002, 2003, 2006, and 2014 were met with high acclaim, as were his interpretation of Gershwin’s Rhapsody in Blue in the sold out Rudolfinum concert hall in Prague.



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