

PERSONAL INFORMATION

Name and surname **Dubravka Kotnik-Karuza**
Academic title Prof.dr.sc., professor
Year and institution of PhD obtained 1978. Technische Universität München (Germany)
E-mail kotnik@phy.uniri.hr
Personal web page <http://www.phy.uniri.hr/hr/djelatnici/28-hr/djelatnici/196-dubravka-kotnik-karuza.html>
Citizenship Croatian

WORK EXPERIENCE

Date (from – until) 2008. →
Institution Department of Physics, University of Rijeka
Position professor, permanent position since 2011.
Head of the Department (2008. – 2014)
Work field physics (astrophysics, physics education)

Date (from – until) 2006.- 2008.
Institution Faculty of Arts and Sciences, University of Rijeka
Position professor, Head of the Chair for Applied Physics
Work field Natural science – physics (research in astrophysics, education in physics and astrophysics)

Date (from – until) 2002. – 2006.
Institution Faculty of Arts and Sciences, University of Rijeka
Position Associate professor, Head of the Chair for Applied Physics
Work field physics (astrophysics, physics education)

Date (from – until) 1998. – 2002.
Institution Faculty of Arts and Sciences, University of Rijeka
Position Assistant professor, Head of the Chair for Applied Physics
Work field Physics (astrophysics, physics education)

Date (from – until) 1980. – 1998.
Institution Faculty of Education, University of Rijeka
Position Assistant professor, Head of the Department of Mathematics, Physics and Informatics (1991. – 1994.)
Head of the Department of Physics (1994. – 1998.)
Work field physics (experimental biophysics, astrophysics, physics education)

Date (from – until) 1972. – 1978.
Institution Max-Planck-Institut für Physik und Astrophysik, München
Position Ph.D. student supported by the Max-Planck-Society
Work field physics (atomic and molecular physics, astrophysics)

Date (from – until) 1972. – 1972.
Institution Institute "Ruđer Bošković", Zagreb (Croatia)
Position Assistant
Work field (atomic and molecular physics)

EDUCATION

Date 1978.
 Place Munich, Germany
 Institution Technical University Munich (TUM)
 Title of qualification awarded Dr.rer.nat
 (1979. the PhD diploma recognized as dr.sc. at the University of Zagreb)

Date 1972.
 Place Zagreb
 Institution Faculty of Science, University of Zagreb
 Title of qualification awarded Dipl.ing.phys.

Date 1967.
 Place Zagreb
 Institution high school
 Title of qualification awarded secondary education

TRAINING

Year 2009.
 Place Paris, France
 Institution Institut d'Astrophysique
 Subject and skills covered astrophysics / Review of entire research of symbiotic stars

Year 2007.
 Place Paris, France
 Institution Institut d'Astrophysique
 Subject and skills covered astrophysics / Circumstellar dust of symbiotic stars

Year 2006.
 Place Cambridge, Massachusetts, USA
 Institution Harvard – Smithsonian Center for Astrophysics
 Subject and skills covered astrophysics / CH Cygni optical jets

Year 2006.
 Place Paris, France
 Institution Institut d'Astrophysique
 Subject and skills covered astrophysics / symbiotic miras

Year 1999.
 Place Paris, France
 Institution Institut d'Astrophysique
 Subject and skills covered astrophysics / RR Tel nebula

Year 1998.
 Place Oxford, UK
 Institution Theoretical Physics department, University of Oxford
 Subject and skills covered astrophysics / late type stars

Year 1994.
 Place Trieste, Italy
 Institution Osservatorio Astronomico Trieste / Istituto nazionale di Astrofisica
 Subject and skills covered astrophysics/ modelling stellar atmospheres

LANGUAGES

MOTHER TONGUE Croatian
ENGLISH LANGUAGE
 Speaking excellent
 Writing excellent
 Reading excellent

OTHER FOREIGN LANGUAGES

Language German
 Speaking excellent
 Writing excellent
 Reading excellent

Language Italian
 Speaking excellent
 Writing good
 Reading excellent

Language French
 Speaking good
 Writing good
 Reading excellent

Language Spanish
 Speaking basic
 Writing basic
 Reading good

RESEARCH PROJECTS

Principal investigator (PI) / Project leader

1. Diagnostics and physical properties of circumstellar matter (Ministry of science, education and sport - 2428), 2007 →
2. Atmospheres of B-supergiants, M-giants and symbiotic stars (Ministry of science and technology - 0009002), 2002-2006
3. CH Cygni: peculiar symbiotic star (Ministry of science and technology - 0009026), 1996-2000
4. Symbiotic and eclipse binary stars (Ministry of science and technology -1-04-157), 1990-1995

Associate investigator

1. Use of experiment in constructing physical models and concepts, project of Ministry of science and technology, 2002-2006
2. Observations and theoretical interpretation of the symbiotic star CH Cygni, 1991. → , IAU Commission: Variable stars
3. Interaction of objects of sea technology with environment (Ministry of science - 2-09-012), 1991-1992.
4. Research, exploitation, and advancement of Adriatic sea in Republic of Croatia (Ministry of science - 73143), 1985-1990. Topic: Development of methods of fluorescent and infrared spectroscopy for analysis and monitoring of polycyclic aromatic carbohydrates (PAH) in sea and air.
5. Situation analysis and projection of growth in education (Ministry of science and technology - 1.10.01), 1985-1990. Topic: Education of physics teachers for development of science and technology.

6. Structure and physics of materials (Ministry of science I-24), 1981-1985. Topic: Spectroscopic research of bio-membranes.

TEACHING

New studies after inauguration of the Bologna model (undergraduate and graduate)

Physics III

Modern physics I

Electronics

Electronics laboratory

Astronomy and astrophysics

Astronomy and astrophysics I

Astronomy and astrophysics II

Physics laboratory IV

Graduate 4-year programme (before inauguration of the Bologna model)

General physics for psychologists (lectures and laboratory exercises)

Physics – electricity, optics (lectures and exercises)

Statistical physics (lectures and exercises)

Electronics laboratory

Electronics (lectures and exercises)

Astronomy and astrophysics (lectures and exercises)

Start-up and formation of new laboratories

Basic electronics laboratory

Physics laboratory IV

Electronics laboratory

Authorship of books

D. Kotnik-Karuza: Basic electronics with laboratory exercises, Faculty of arts and sciences, Rijeka, 2000.

Authorship of manuscripts for internal use

D.Kotnik-Karuza: Laboratory in basic electronics

M. Sarta Deković, D. Kotnik-Karuza: Modern physics laboratory

MENTORSHIP OF DEFENDED DOCTORAL AND MASTER DISSERTATIONS AND TRAINING OF YOUNG RESEARCHERS AND SCIENTISTS

2 doctoral dissertations, 4 master dissertations (mr.sc.), 25 diploma thesis (graduate study), 1 bachelor thesis (undergraduate study)

doctoral dissertations

Tomislav Jurkić : Circumstellar dust of stars of different evolutionary phases, Faculty of Science, Zagreb (doctoral postgraduate study in Atomic and molecular physics and astrophysics), 2012

Rajka Jurdana-Šepić: Temporal changes of physical parameters in symbiotic star CH Cygni, Faculty of Science, Zagreb (doctoral postgraduate study in Atomic and molecular physics and astrophysics), 2000.

Master dissertations (mr.sc.- postgraduate study)

Nataša Erceg: Zeeman effect - methodical shaping of the experiment, Faculty of science and education, Split (postgraduate study in Didactics of natural sciences – field: physics), 2006

Mariza Sarta-Deković: CNO processed material in atmospheres of galactic OB supergiants, Faculty of Natural Sciences, Zagreb (postgraduate study in Atomic and molecular physics and astrophysics), 2006

Zlatko Majlinger: Cold component of CH Cygni at the end of active phase 1998-2000, Faculty of Natural Sciences, Zagreb (postgraduate study in Atomic and molecular physics and astrophysics), 2006

Rajka Jurdana-Šepić: Optical spectroscopy of symbiotic star CH Cygni in the period 1987-89. Faculty of Natural Sciences, Zagreb (postgraduate study in Atomic and molecular physics and astrophysics), 1992.

VISITS TO FOREIGN RESEARCH AND EDUCATION INSTITUTIONS

1978 - 1980

München/Garching, Germany

Max-Planck-Institut für Physik und Astrophysik, Institut für Extraterrestrische Physik

ORGANIZATIONAL SKILLS AND COMPETENCES

Chief of the organizational committee of the International Summer school of astrophysics Novicosmo: Highlights in Astrophysics, 20.9.-30.9.2009, Rabac, Croatia, jointly organized by Department of Physics University of Rijeka and International school for advanced studies (SISSA - Scuola Internazionale Superiore di Studi Avanzati), Trieste, Italy

MEMBERSHIP IN SCIENCE ORGANIZATIONS AND BODIES

IAU – International Astronomical Union

EAS – European Astronomical Society

HFD – Croatian Physical Society

HAD – Croatian Astronomical Society

DMF – Society of mathematicians and physicists Rijeka

Universitas – Society for development of higher education

COMMISSIONS, COMMITTEES, BOARDS AND WORK GROUPS

2009. → member of the senate of the University of Rijeka

2009. → member of the Scientific committee for the field of physics of the Agency for Science and Higher Education Croatia

2007. → reviewer of graduate and undergraduate study programmes of higher education institutions in Croatia

2005.-2008.: member of the Scientific Area Council for Natural Sciences of the Agency for Science and Higher Education Croatia

2006.-2007.: member of the National Review Committee for evaluation of scientific projects and programs in the area of natural sciences

2006.-2007.: member of the Board for Quality Assessment of the University of Rijeka and member of the commission for monitoring self-evaluation and implementation of action plans in scientific and education departments and faculties of the University of Rijeka

PAPERS

bibliography

[CROSBİ](#) (Croatian Science Bibliography, since 1992.)

[SAO/NASA ADS](#)

Reviews

- Postgraduate specialist university study programme *Physics Education*, Faculty of Science, University of Zagreb
- *Physical measurements practicum*, textbook, Faculty of Medicine, Rijeka, 2007
- scientific evaluation for the national yearly award for natural sciences
- evaluation of scientific projects funded by the Ministry of Science, Education and Sports (MZOS) and by the Croatian Science Foundation (HRZZ)
- for scientific journals *Astronomy & Astrophysics*, *IEEE Transactions on magnetics*

- tests for competitions in astronomy on the school, county and state levels

- analysis of self-evaluation and implementation of action plans at Faculty of Economics and Faculty of Medicine in Rijeka, and Faculty of Philosophy in Pula
- start-up and coordination of activities in the proposal for the establishment of the Faculty of Science and Mathematics at the University of Rijeka (1996)

- coordination in developing undergraduate and graduate study programmes in physics, including modulus *Environmental Science*

COMPUTER SKILLS

MS Office. LaTeX. Permanent training in accordance with research and teaching requirements.