# OMID JOHARCHI

Research Scientist

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## STRENGTHS

### Method Design

A new methodology for screening predatory mites, based on a comprehensive analysis of their life strategies

### Project Management

Successful completion of five international research projects and 25 national projects on biodiversity and taxonomy

## SKILLS

Taxonomy • Biodiversity • biocontrol •

Molecular Systematics • PCR • IPM •

Analyzing life table parameters •

Two-sex chart • Gene Expression •

Sanger sequencing and barcoding •

Fossil mites • Phylogenetic Analysis

## ACHIEVEMENTS

### Successful Drug Candidate

Technical knowledge on the mass production of various predatory mites and remarkable scientific results in the field of mite biodiversity (Acari: Mesostigmata), published in more than 150 peer-reviewed articles.

## AWARDS

### Best Technologist of the Province in the category Technological Projects

Awarded for technical knowledge of the mass production of indigenous predatory mites.

### Outstanding researcher in five years

Recognized for exceptional contributions to the determination of the biodiversity of invertebrates, especially Arachnida: Acari.

## SUMMARY

My specialty is the integrative taxonomy and biology of invertebrates (especially Arachnida: Acari). In the last 13 years of my professional career, I have achieved remarkable scientific results in the field of invertebrate biodiversity in about 30 countries around the world (in Europe, Australia, North America, the Middle East, Central Asia, East and Southeast Asia, the Russian Far East, Western Siberia, the Arctic and Africa). I have described more than 200 species and six new genera from different families of mesostigmatic mites in more than 150 peer-reviewed publications.

## EXPERIENCE

### Visiting Research Fellow — 06/2023 - Present

**Andong National University** — Republic of Korea

Discovery of Korean Indigenous Species, the National Institute of Biological Resources, Ministry of Environment of the Republic of Korea

- Integrative taxonomy (combined taxonomy, physiology and molecular approaches) of native species of Korea.
- Explores the fascinating symbiotic relationships between mites and insects, focusing on the evolutionary role of phoresy, symbiosis, and commensalism in the development of parasitism.
- Development of a comprehensive methodology for screening predatory mites within the order Mesostigmata, based on an in-depth analysis of their life strategies.

### Visiting scholar — 2023 - Present

**Johann Friedrich Blumenbach Institute of Zoology and Anthropology Animal Ecology, Georg-August-Universität-Göttingen** — Göttingen, Germany

Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems

- Investigate the ecological relationships between mites and their host insects and explore their potential relevance to ecological and evolutionary research programs.
- DNA barcodes
- Development of co-phylogenies to assess the degree of mite specialization
- Species level identification of gamasid mites

### High Quality Specialist — 06/2021 - 12/2023

**International Laboratory of Climate Change, Land Use and Biodiversity at Tyumen State University.** — Tyumen, Russia

Discovery of Russian Indigenous Species

- Integrative taxonomy (combined taxonomy, physiology and molecular approaches) of indigenous Russian species.
- Applied knowledge of mite taxonomy as a basis for biological research and pest control strategies.
- Developed a comprehensive methodology for screening predatory mites within the Mesostigmata order, based on in-depth analysis of their life strategies.

### Post-doctoral fellow — 04/2018 - 06/2021

**International Laboratory of Climate Change, Land Use and Biodiversity at Tyumen State University** — Tyumen, Russia

Taxonomic diversity of insects and mites in Western Siberia

- Used edaphic mesostigmatic mites (Acari: Mesostigmata) as a valuable tool for bioindication.
- Applied knowledge of mite taxonomy as a basis for biological research and pest control strategies.
- Phylogenetic analysis and applied genetic data to improve taxonomic classification.

### Visiting Scientist Fellow — 12/2009 - 01/2010

**Australian National Insect Collection, CSIRO Ecosystem Sciences** — Canberra, Australia

Diversity of insects and mites of Australia

- Integrative taxonomy (combined taxonomy, ecophysiology and molecular approaches) of species native to Australia.

## PROJECTS

### The ecological and genetic principles for bio-resource screening of insects and mites for biological pest control

2020 - Present Russia

The introduction of natural enemies as a mode of biological control has had some negative impacts on local species communities.

- Improved biological control by screening new native, more effective natural predatory mites and this ecological dilemma combined several approaches such as: Taxonomy, Ecophysiology, Genetics

### Ecological and Socioeconomic Functions of Tropical Lowland Rainforest Transformation Systems (Sumatra, Indonesia)

2020 - Present Germany

See here

- Discovery of the gamasid edaphic mite fauna of Sumatra, Indonesia
- Investigate to explore mites potential relevance to ecological and evolutionary research programs

### The survey of Korean indigenous species

2017 - Present Republic of Korea

See here

- Discovery of Korean Indigenous Species

### Mechanisms of resistance to neonicotinoids in the tobacco whitefly, Bemisia tabaci and natural enemies' population

2023 - Present China

The project aims to identify the resistance mechanisms of pests and beneficial arthropods to neonicotinoid insecticides. For stable plant protection, the resistance of pests must be suppressed and the resistance of entomophagous (natural enemies) increased

- Methods for combining entomophagous and neonicotinoid applications to protect vegetable crops in greenhouses

## EXPERIENCE

### Expert and technical manager of the plant protection laboratory

01/2006 - 04/2018

**Banyan Mazraeh Sabz Ltd.** Tehran, Iran

Plant Protection Laboratory

- Research in the field of diagnosis and moderate management of pests and plant diseases.
- Conduct quarantine tests for exported agricultural products and provide scientific solutions to increase the efficiency of farms for export.
- Study and research the effect of pesticides and the method of their application to increase the efficiency of products in gardens, farms and greenhouses.
- Research in the field of biological control of pests and plant diseases to reduce the use of toxic substances and protect the environment.
- Scientific and laboratory evaluation and research in the field of methods for the effective control of plant diseases on farms.
- Carry out the necessary tests to identify plant pathogens such as fungi, bacteria and nematodes.
- Calculate the threshold for economic damage in different farms and gardens based on the type of product.

### Associate Professor

01/2017 - Present

**Islamic Azad University** Yazd, Iran

One of the largest comprehensive systems of universities, colleges, and community colleges in the world

- Teaching and research on insects and mites, which are important agricultural pests, and various methods of controlling them.

## EDUCATION

### PhD in Agricultural Entomology

09/2007 - 08/2011

**Science & Research Branch, Islamic Azad University** Tehran, Iran

### MSc in Agricultural Entomology

09/2005 - 08/2007

**Science & Research Branch, Islamic Azad University** Tehran, Iran

### B.Sc. in Plant Protection

09/2001 - 08/2005

**Mohaghegh Ardebili University** Ardebil, Iran

## LANGUAGES

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| English | Advanced | ●●●○○ | Turkish | Proficient | ●●●●○ |
| Russian | Beginner | ●○○○○ | Persian | Native | ●●●●● |
| Arabic | Beginner | ●○○○○ | | | |