



**Institute of Molecular Physics  
Polish Academy of Sciences**  
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**Director of Institute of Molecular Physics, Polish Academy of Sciences**  
announces a recruitment for the position of professor  
at the Department of Molecular Crystals (Z-12)

**Institution:** Institute of Molecular Physics Polish Academy of Sciences (IMP PAS)

(PL: Instytut Fizyki Molekularnej Polskiej Akademii Nauk /IFM PAN/)

**City:** Poznań, Poland

**Position:** Professor

**Scientific discipline:** physical sciences

**Opening date:** 11<sup>th</sup> April 2022

**Application deadline:** 22<sup>th</sup> April 2022, 15:00 CEST

**Website:** <http://www.ifmpan.poznan.pl>

**Key words:** quantum mechanics, solid state physics, chemical physics, low-dimensional organic conductors, electron-electron and electron-phonon interactions, vibrational and electronic spectra

## **I. Offer description:**

Title of the scientific project:

Electronic states, proton conduction and molecular dynamics in organic materials for molecular electronics, fuel cells and photovoltaics

Project description:

Richness of electronic states in crystalline organic conductors (charge-transfer salts) is a consequence of low-dimensionality, strong electron correlations, coupling of electrons with molecular vibrations and magnetic interactions. This group of materials is interesting not only from the point of view of fundamental research but also a possibility of practical application in molecular electronics and spintronics. New low-dimensional salts formed by symmetrical and asymmetrical electron donors (mostly TTF derivatives) and salts formed by the acceptor TCNQ are studied. Additionally, in the Department of Molecular Crystals proton conductors for potential applications in fuel cells are also investigated. The third direction of research are new molecular materials for photovoltaics and optoelectronics, mostly hybrid materials formed by graphene oxide with different organic modifiers. The materials are studied by various infrared and Raman spectroscopic techniques; when necessary fluorescence and UV-Vis spectra are also measured. Suitable calculations by DFT methods are performed to assign vibrational and electronic bands and get a deeper knowledge about studied materials suitable

Research objectives:

The aim are studies of charge ordering and fluctuations of charge distribution, and also metal-insulator phase transitions in low-dimensional organic conductors. On the other hand, mechanisms of proton conduction are also investigated in the Department of Molecular Crystals. Infrared and

Raman spectroscopies are very useful experimental techniques in the research of new molecular materials for photovoltaics and optoelectronics.

## **II. Requirements for candidates:**

### **1. Research career stage:**

R4: Leading Researcher (researchers leading their research area or field).

More information on career stages: <https://www.more3.eu/indicator-tool/career-stages-r1-to-r4>

### **2. Required education:**

- in the discipline: physical sciences;
- professional title: professor of physics.

### **3. Required qualifications and skills:**

- physics of low-dimensional molecular conductors and superconductors, multifunctional molecular materials, electron-electron and electron-phonon interactions, charge ordering phenomena, electron ferroelectrics;
- documented scientific achievements (publications in international journals, conference contributions, leading of scientific groups, participation in scientific projects);
- experience in promotion of science.

### **4. Special requirements:**

Infrared and Raman spectroscopy, UV-Vis spectroscopy, electron transport, dielectric properties

### **5. Knowledge of English:**

level of knowledge of English: good

### **6. Scientific experience required:**

- in the discipline: physical sciences;
- on the topic of: solid state physics, optics, chemical physics.

**7. Professional experience required:** over 10 years

**III. Duration of the employment:** to be determined individually

**IV. Type of contract:** full time

**V. Expected date of employment start:** 1<sup>st</sup> May 2022

**VI. Employment type:** employment contract

**VII. Salary:** in accordance with the law

**VIII. Number of positions offered:** 1

### **IX. Job benefits:**

a diverse and inclusive work environment, balance between work and family life, flexible working hours, the opportunity to benefit from annual leave, seniority increment, jubilee benefits, benefits from the social fund, co-financing for the purchase of glasses, possibility of the group insurance offer, free parking

**X. Required documents:**

1. Application;
2. CV including information on education and the course of scientific careers, internships and scientific training, conference presentations and seminars, prizes and awards, participation in research projects, acquired funds, organizational achievements, etc.;
3. list of scientific publications;
4. a scan or photocopy of the university diploma, PhD degree or academic title;
5. consent to the processing of personal data for recruitment purposes (Appendix No. 1);
6. statement that if the contest is won, Institute of Molecular Physics Polish Academy of Sciences will be the primary place of work within the meaning of the Act of 20 July 2018 Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended) - Appendix No. 2;
7. opinion of the head of the division or of the head of research department - optional.

**Documents in other languages than Polish or English should be translated into Polish or English.**

**XI. Method of submitting offers:**

Applications with the annotation professor – **Z12 - no. 05** should be delivered to the Institute's address or sent to the e-mail address [director@ifmpan.poznan.pl](mailto:director@ifmpan.poznan.pl).

**Contact person:**

Name: Prof. dr. hab. Tomasz Toliński

e-mail: [tomtol.@ifmpan.poznan.pl](mailto:tomtol.@ifmpan.poznan.pl) , phone: +48 (0)61 869 52 49

**XII. Qualification criteria:**

1. Job application competition.
2. The best-ranked candidates may be invited to a hybrid interview (either on-site interview or videoconference) and/or a seminar presentation.

**XIII. Qualification process:**

1. Job application competition.
2. The best-ranked candidates may be invited to a hybrid interview (either on-site interview or videoconference) and/or a seminar presentation.

Candidate ratings will be done by the Competition Commission appointed by the Director. A candidate with a negative opinion may appeal against the results of the evaluation to the Director within 7 days from the date of receipt of the Competition Committee's opinion.

**XIV. Expected date of the results announcement:** 28<sup>th</sup> April 2022

**XV. Additional information:** IPM PAS does not provide accommodation.

**DISCLAIMER:**

According to art. 13 1 and 2 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (Journal of Laws UE L 119/1 of 4.5.2016), hereinafter referred to as RODO, we inform that:

1. The administrator of your personal data is the Institute of Molecular Physics Polish Academy of Sciences in Poznań, ul. Mariana Smoluchowskiego 17.
2. Your personal data will be processed for the duration of the recruitment process.
3. You have the right to request from the administrator access to personal data, the right to correct them, delete or limit processing, the right to object to the processing of personal data, as well as the right to transfer data.
4. You have the right to withdraw your consent at any time. The above does not affect the compliance with the law, which was made on the basis of your consent before it was withdrawn.
5. It is possible to lodge a complaint with the supervisory body - the President of the Office for Personal Data Protection.
6. Providing personal data is voluntary.
7. Your data will not be shared with entities other than entities authorized on the basis of applicable law.
8. The administrator will not transfer your personal data to recipients in third countries and international organizations.

**Appendix 1****Consent for the processing of personal data for recruitment purposes**

I agree to the processing of personal data provided in this document for realising the recruitment process pursuant to the Personal Data Protection Act of 10 May 2018 (Journal of Laws 2018, item 1000) and in agreement with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

.....  
Name

.....  
Date and signature

**DECLARATION**

I declare that if I win the Contest the Institute of Molecular Physics of the Polish Academy of Sciences will become my primary place of work within the meaning of the Act of 20 July 2018, Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended).

.....  
Name

.....  
Date and signature