


## PERSONAL INFORMATION

## Ivan Marić



 A. Stepinca 56A, 32252 Otok, Croatia

 +385 97 681 2996

 imaric@irb.hr

 <https://www.irb.hr/eng/About-RBI/People/Ivan-Maric>

Sex Male | Date of birth 28/8/1993 | Nationality Croatian

## WORK EXPERIENCE

1 August 2018 –  
Current

## Assistant

Ruđer Bošković Institute, Division of Materials Chemistry, Radiation Chemistry and Dosimetry Laboratory,

- Synthesis of magnetic nanoparticles (iron oxides) and Au, Ag nanoparticles in the presence of various polymers, as well as their nanocomposite hydrogels by  $\gamma$ -irradiation.
- Characterization of materials with thermal analysis method (DSC), FTIR, UV-Vis and Mössbauer spectroscopy, XRD, DLS and microscopy (SEM, TEM)
- Mentor: Dr. Tanja Jurkin

1 February 2018 –  
1 August 2018

## Volunteer

Ruđer Bošković Institute, Division of Materials Physics, Laboratory for Molecular Physics and Synthesis of New Materials

- Synthesis and characterization of various metal oxides and oxyhydroxides ( $\text{TiO}_2$ , manganese oxides in different oxidation states, iron oxides)
- Catalysis experiments of synthesized materials for the degradation of organic dyes
- Mentor: Dr. Marijan Gotic

## EDUCATION

2018. – Current

## Ph. D. Chemistry

University of Zagreb, Faculty of Science, Department of Chemistry

2015. – 2018.

## M. Sc. Chemistry

University of Zagreb, Faculty of Science, Department of Chemistry

- Title of the MSc thesis: "Hydrothermal synthesis and photocatalytic activity of nanocrystalline solid solutions of the  $\text{TiO}_2$ - $\text{Fe}_2\text{O}_3$  system"

2012. – 2015.

## B. Sc. Chemistry

University of Osijek, Department of Chemistry

Title of the BSc thesis: "Solution and refinement of crystal structures"

TRAINING (TRAINING  
COURSES, WORKSHOPS)

16. – 20. 8. 2021. "Virtual Training Course on Applied Radiation Technology as a Tool for Recycling of Polymer Waste" - (online)

19. – 22. 4. 2021. Virtual Workshop on Radiation Technology for Industry and Environment - (online)

31. 10. – 29. 11. 2020. Short-term stay at "Institut des Molecules et Materiaux du Mans", Le Mans, France financed by Ruđer Bošković Institute stipend

7. 10. 2020. Webinar „Dissemination of the Knowledge on Application of Ionizing Radiation for Sterilization of Medical Equipment, Personal Protection Equipment and the other Microbiologically Infected Objects“ - (online)

4. – 10. 7. 2020. 6<sup>th</sup> European Crystallography School - ECS6 (online)

28. 9.-2. 10. 2020. The European School on Magnetism 2020 – e-ESM 2020 (online)
28. 1. 2020. Microwave Synthesis Course  
Anton Paar  
Zagreb (Croatia)
13. 10. – 29. 11. 2019. Short-term stay at “Institut des Molecules et Materiaux du Mans”, Le Mans, France financed by French Embassy & Ruđer Bošković Institute stipend
9. – 10. 10. 2019. Mössbauer spectrometry and nanomaterials workshop  
Ruđer Bošković Institute  
Zagreb (Croatia)
2. – 3. 10. 2019. 1st LKB MicroCal User Meeting  
Zagreb (Croatia)
11. – 14. 6. 2019. IAEA Regional Workshop TC Project RER1019 „Status, Advances and Applications of Ionizing Radiation on Biomedical Materials“  
(IAEA project TC 1019), Ruđer Bošković Institute (co-organized with IAEA)  
Zagreb (Croatia)
9. – 10. 5. 2019. Workshop on Solar Energy Materials  
Ruđer Bošković Institute  
Zagreb (Croatia)
1. 4. 2019. Dosimetry Workshop  
Strasbourg (France)
27. – 29. 3. 2019. Pre-IMRP Course on Radiation Processing for Advanced Materials  
Université de Reims-Champagne-Ardenne (organized by iia-IAEA, participation funded by the iia-IAEA grant)  
Reims (France)

## PERSONAL SKILLS

Mother tongue(s) Croatian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	C1

**Job-related skills**

- good knowledge of different experimental techniques for the chemical synthesis of nanoparticles (gamma-irradiation, hydrothermal synthesis), as well as a working knowledge of characterization techniques such as gas adsorption for surface analysis, DSC, XRD, DLS, FT-IR, Mossbauer and UV/Vis/NIR spectroscopies and electron microscopy

**Digital competences (Computer skills)**

- Very good knowledge of Microsoft Office suite (Excel, Powerpoint, Word), Origin for general data analysis, crystallographic software (Maud, Match!, Qualx, Olex2, Mercury), Mössbauer spectra fitting software (MossWinn), UV-Vis spectra analysis (Spectragryph) and other.

## ADDITIONAL INFORMATION

**RESEARCH  
PROJECTS****Collaborator on 3 research projects:**

- collaborator on the Installation Research Project of Croatian Science Foundation UIP-2017-05-7337 "The impact of polymers on radiolytic synthesis of magnetic nanoparticles" (2018 – 2023). PI: Dr. Tanja Jurkin
- collaborator on Croatian-Slovenian bilateral project "Radiolytic synthesis of magnetic  $\delta$ -FeOOH@Au nanoparticles designed for biomedical applications" (2020 – 2021). PI: Dr. Tanja Jurkin
- collaborator on Croatian-Hungarian bilateral project "Platinum decorated iron tin oxide solid solutions for hydrogen gas sensing" (2021 – 2022). PI: Dr. Marijan Gotić

**MEMBERSHIP IN  
SCIENTIFIC  
ORGANIZATIONS**

- Croatian Chemical Society
- European Microscopy Society
- Croatian Radiation Protection Association
- Croatian Society for Electron Microscopy
- Croatian Crystallographic Union

**CONFERENCES**

- 14 presentations at international conferences (14 poster presentations)
- full list of abstracts accessible at <https://www.bib.irb.hr/pretraga?operators=and|Mari%C4%87,%20Ivan%20%2835327%29|text|profile>
- and at <https://scholar.google.hr/citations?user=fGZWGc8AAAAJ&hl=en&oi=ao>
- Assisted in the organization of Croatian Meeting of Chemists and Chemical Engineers 2019

**PUBLICATIONS AND  
CITATIONS**

- **14 scientific papers**
- full list of papers accessible at:  
<https://www.bib.irb.hr/pretraga?operators=and|Mari%C4%87,%20Ivan%20%2835327%29|text|profile>  
at Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57204789378>  
at Google Scholar: <https://scholar.google.hr/citations?user=fGZWGc8AAAAJ&hl=en&oi=ao>

**AWARDS**

- **Medal of excellence awarded by University of Zagreb, Faculty of Science, Department of Chemistry**
- **Best student award awarded by University of Osijek, Department of Chemistry**
- **Ruđer Bošković Institute yearly award for best scientific papers in 2019. (1 paper)**
- **Ruđer Bošković Institute yearly award for best scientific papers in 2020. (4 papers)**

## ANNEXES – LIST OF PUBLICATIONS

### SCIENTIFIC PAPERS IN JOURNALS CITED BY CURRENT CONTENTS AND WEB OF SCIENCE:

1. Bousiakou, Leda G.; Dobson, Peter J.; Jurkin, Tanja; **Marić, Ivan**; Aldossary, Omar; Ivanda, Mile  
Optical, structural and semiconducting properties of Mn doped TiO<sub>2</sub> nanoparticles for cosmetic applications. // *Journal of King Saud University – Science* (2022).
2. Radin, Edi; Štefanić, Goran; Dražić, Goran; **Marić, Ivan**; Jurkin, Tanja; Pustak, Anđela; Baran, Nikola; Raić, Matea; Gotić, Marijan  
Solid-State Dispersions of Platinum in the SnO<sub>2</sub> and Fe<sub>2</sub>O<sub>3</sub> Nanomaterials. // *Nanomaterials*, **11** (2021) 3349
3. Mohaček-Grošev, Vlasta; Brljafa, Sandro; Škrabić, Marko; **Marić, Ivan**; Blažek Bregović, Vesna; Amendola, Vincenzo; Ropret, Polona; Kvaček Blažević, Anita  
Glucosamine to gold nanoparticles binding studied using Raman spectroscopy. // *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, **264** (2022) 120326.
4. Mikac, Lara; Sabolić, Nikola; Raić, Matea; **Marić, Ivan**; Jurkin, Tanja; Gotić, Marijan; Škrabić, Marko; Rigo, Istvan; Veres, Miklos; Ivanda, Mile  
Synthesis of porous silicon based nanoparticles for applications in surface enhanced Raman spectroscopy. // *Vacuum*, **191** (2021) 110335.
5. Mikac, Lara; Kovačević, Ema; Ukić, Šime; Raić, Matea; Jurkin, Tanja; **Marić, Ivan**; Gotić, Marijan; Ivanda, Mile  
Detection of multi-class pesticide residues with surface-enhanced Raman spectroscopy. // *Spectrochimica Acta Part A: Molecular Spectroscopy*, **252** (2021) 119473.
6. **Marić, Ivan**; Šijaković-Vujičić, Nataša; Pustak, Anđela; Gotić, Marijan; Štefanić, Goran; Grenèche, Jean-Marc; Dražić, Goran; Jurkin, Tanja  
Rheological, microstructural and thermal properties of magnetic poly(Ethylene oxide)/iron oxide nanocomposite hydrogels synthesized using a one-step gamma-irradiation method. // *Nanomaterials*, **10** (2020) 1823.
7. **Marić, Ivan**; Gotić, Marijan; Štefanić, Goran; Pustak, Anđela; Jurkin, Tanja  
γ-irradiation generated ferrous ions affect the formation of magnetite and ferrihydrite. // *Radiation Physics and Chemistry*, **170** (2020) 108648
8. **Marić, Ivan**; Šijaković Vujičić, Nataša; Pustak, Anđela; Gotić, Marijan; Jurkin, Tanja  
One-step synthesis of poly(ethylene oxide)/gold nanocomposite hydrogels and suspensions using gamma-irradiation. // *Radiation Physics and Chemistry*, **170** (2020), 108657
9. Raić, Matea; Mikac, Lara; **Marić, Ivan**; Štefanić, Goran; Škrabić, Marko; Gotić, Marijan; Ivanda, Mile  
Nanostructured Silicon as Potential Anode Material for Li-Ion Batteries. // *Molecules*, **25** (2020) 891
10. **Marić, Ivan**; Dražić, Goran; Štefanić, Goran; Zadro, Krešo; Gotić, Marijan; Jurkin, Tanja  
Characterization of radiolytically synthesized ferrihydrite and oxidized magnetite nanoparticles. // *Materials Characterization*, **159** (2020) 110038
11. Mikac, Lara; **Marić, Ivan**; Štefanić, Goran; Jurkin, Tanja; Ivanda, Mile; Gotić, Marijan  
Radiolytic synthesis of manganese oxides and their ability to decolorize methylene blue in aqueous solutions. // *Applied surface science*, **476** (2019), 1086-1095
12. **Marić, Ivan**; Štefanić, Goran; Gotić, Marijan; Jurkin, Tanja  
The impact of dextran sulfate on the radiolytic synthesis of magnetic iron oxide nanoparticles. // *Journal of molecular structure*, **1183** (2019) 126-136
13. **Marić, Ivan**; Dražić, Goran; Ivanda, Mile; Jurkin, Tanja; Štefanić, Goran; Gotić, Marijan  
Impact of Fe(III) ions on the structural and optical properties of anatase-type solid solutions. // *Journal of molecular structure*, **1179** (2019), 354-365
14. **Marić, Ivan**; Gotić, Marijan; Jurkin, Tanja; Mikac, Lara; Tronc, Élisabeth; Ivanda, Mile  
Structural Properties of Iron/Titanium Oxide Nanoparticles Synthesized by Sol-gel Method in the Presence of Poly(ethylene glycol). // *Croatica Chemica Acta*, **91** (2018) 577-588