

بسمه تعالی

مشخصات و سوابق علمی
محمد جواد ترکمنی

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متولد: اول شهریور ۱۳۵۲

وضعیت تاهل: متاهل و دارای دو فرزند

عضو هیات علمی مرکز ملی علوم و فنون لیزر ایران

آدرس: تهران- انتهای خیابان کارگر شمالی - خیابان بیستم (شهید ابطحی غربی)، پلاک ۷۱

دفتر مرکز ملی علوم و فنون لیزر ایران.

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تحصیلات دانشگاهی:

مقطع	دانشگاه محل تحصیل	رشته - گرایش	تاریخ اخذ مدرک
کارشناسی	دانشگاه اصفهان	فیزیک کاربردی	۱۳۷۴-۱۳۷۰
کارشناسی ارشد	دانشگاه اصفهان	فیزیک اتمی و مولکولی	۱۳۷۷-۱۳۷۴
دکتری	دانشگاه تربیت مدرس	مهندسی مواد (شناسایی و انتخاب مواد)	۱۳۹۴-۱۳۹۰
فرصت مطالعاتی	دانشگاه لولئو سوئد	High Power Laser Welding	۱۳۹۳-۱۳۹۲

اساتید راهنما: دکتر فرشید مالک (دانشگاه تربیت مدرس)، دکتر محمود سلطان الکتابی (دانشگاه اصفهان)

سوابق آموزشی:

الف- مدرس دانشگاه اصفهان و دانشگاه آزاد اراک (۱۳۷۶-۱۳۷۸)

فیزیک عمومی ۱ و ۲ و فیزیک پایه ۳ و آزمایشگاه های فیزیک عمومی

ب- تدریس در دانشگاه آزاد واحد علوم و تحقیقات تهران و مرکز آموزش عالی انقلاب اسلامی تهران.

فیزیک پایه ۱، ۲، ۳ و آزمایشگاه های فیزیک عمومی (۱۳۷۹-۱۳۸۰)

ج- استاد مشاور در بیش از ۳۰ پایان نامه کارشناسی ارشد متالورژی دانشگاه تربیت مدرس، کارشناسی ارشد و دکتری فیزیک دانشگاه صنعتی امیرکبیر، کارشناسی ارشد مهندسی مکانیک دانشگاه علم و صنعت ایران و کارشناسی ارشد فیزیک دانشگاههای زنجان و همدان:

- ۱) محمد جواد حامدی کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۵
- ۲) احسان پاپن کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۶
- ۳) محسن حائری فر کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۶
- ۴) سکینه خسروی نیا کارشناسی ارشد فیزیک (اتمی و مولکولی) دانشگاه زنجان فارغ التحصیل ۱۳۸۷
- ۵) حامد نجفیان آغمیونی کارشناسی ارشد مکانیک (ساخت و تولید) دانشگاه علم و صنعت ایران فارغ التحصیل ۱۳۸۷
- ۶) بهزاد محمودی کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۸
- ۷) مریم جندقی دانشجوی دکتری فیزیک اتمی و لیزر دانشگاه صنعتی امیرکبیر فارغ التحصیل آذرماه ۱۳۸۸
- ۸) سوسن قلمداران دانشجوی کارشناسی ارشد فیزیک اتمی و لیزر دانشگاه صنعتی امیرکبیر آذرماه ۱۳۸۸
- ۹) بهتاش عبداللهی کارشناسی ارشد متالورژی (عملیات سطحی با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۸
- ۱۰) فاطمه میر آخور لی کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۸
- ۱۱) زینب ملکشاهی کارشناسی ارشد متالورژی (جوشکاری با لیزر) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۸
- ۱۲) محمد رضا عرفان کارشناسی ارشد مکانیک (سنگ) دانشگاه تربیت مدرس فارغ التحصیل ۱۳۸۸
- ۱۳) مرضیه ولی اقبال کارشناسی ارشد فیزیک اتمی دانشگاه بوعلی همدان فارغ التحصیل مهر ماه ۱۳۸۹
- ۱۴) زهرا باقری کارشناسی ارشد فیزیک اتمی و لیزر دانشگاه صنعتی امیرکبیر فارغ التحصیل بهمن ماه ۱۳۸۹
- ۱۵) نجمه السادات حسینی مطلق کارشناسی ارشد فیزیک اتمی و لیزر دانشگاه صنعتی امیرکبیر فارغ التحصیل بهمن ماه ۱۳۸۹
- ۱۶) ابراهیم هراتی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل بهمن ماه ۱۳۸۹
- ۱۷) فائزه مجتهدی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل اسفند ماه ۱۳۸۹

- ۱۸) حامد نیکو کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل اردیبهشت ماه ۱۳۹۰
- ۱۹) تینا شریفی کارشناسی ارشد فیزیک اتمی، دانشگاه آزاد واحد علوم و تحقیقات تهران فارغ التحصیل شهریور ۱۳۹۰
- ۲۰) معصومه رضایی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل بهمن ماه ۱۳۹۰
- ۲۱) مصطفی جوکار کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل بهمن ماه ۱۳۹۰
- ۲۲) پیمان صابری کارشناسی ارشد مهندسی متالورژی دانشگاه علم و صنعت ایران فارغ التحصیل بهمن ماه ۱۳۹۰
- ۲۳) بیتا درخشانی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل اسفند ماه ۱۳۹۰
- ۲۴) محمد محمودیان کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل اسفند ماه ۱۳۹۰
- ۲۵) امیر مرادیانی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل بهمن ماه ۱۳۹۱
- ۲۶) هدی فضلی کارشناسی ارشد مهندسی مکانیک دانشگاه شهید رجایی تهران فارغ التحصیل اسفند ۱۳۹۱
- ۲۷) فاطمه بزک کارشناسی ارشد فیزیک اتمی دانشگاه بوعلی همدان فارغ التحصیل مهر ماه ۱۳۹۱
- ۲۸) بابک مهرجو کارشناسی ارشد متالورژی دانشگاه تهران ۱۳۹۲
- ۲۹) حسن قربانی کارشناسی ارشد متالورژی دانشگاه تهران ۱۳۹۲
- ۳۰) آرمان خلیلی کارشناسی ارشد مهندسی متالورژی دانشگاه علم و صنعت ایران فارغ التحصیل دی ماه ۱۳۹۳
- ۳۱) مرتضی پاک نیت کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل بهمن ماه ۱۳۹۴
- ۳۲) شکوفه طهماسبی کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل شهریورماه ۱۳۹۵
- ۳۳) سید سجاد پورجعفر کارشناسی ارشد متالورژی (شناسایی) دانشگاه تربیت مدرس فارغ التحصیل شهریور ۱۳۹۶

ثبت اختراع:

۱- ساخت دستگاه تغذیه پودر با پاشش یکنواخت و نرخ خروجی کم مورد استفاده در لایه

نشانی لیزری (۱۳۸۷)

۲- تکنیک جلوگیری از ترکیب ذوب شدگی سوپر آلیاژ پایه نیکلی (۱۳۸۷)

۳- جوشکاری لیزری (آلومینیوم آلیاژی ۲۰۲۴) به همراه فلز پرکن (۱۳۸۷)

۴- تولید قطعات غیر هم جنس آلومینیوم- فولاد با استفاده از لیزر Nd:YAG (۱۳۸۷)

۵- جوشکاری ورق فولادی با دو ضخامت ۱ و ۱٫۵ میلیمتر با استفاده از لیزر یاق پالسی (۱۳۸۹)

عضویت در مجامع علمی :

الف- عضو پیوسته انجمن اپتیک و فوتونیک ایران از ۱۳۸۲ تا کنون

ب- عضو موسسه فیزیک انگلیس (Institute Of Physics) از سال ۲۰۰۵ تا کنون

ج- عضویت در انجمن اپتیک اروپا (European Optical Society) از ۲۰۱۰

د- عضو انجمن نانو آمریکا (American Nano Society) از ۲۰۱۱

ه- عضو کمیته علمی چهارمین کنفرانس ملی مهندسی فوتونیک ایران ۱۳۹۰ تبریز

سوابق پژوهشی:

- ✓ تحقیق در زمینه ساخت لیزرهای گازی مخصوصا لیزرهای بخار مس و CO₂
- ✓ تحقیق در زمینه طراحی و ساخت انواع لیزرهای حالت جامد Nd:YAG
- ✓ پژوهش در زمینه برهم کنش لیزر با انواع مواد
- ✓ سنتز نانو مواد مختلف با استفاده از کندو پاش لیزری در انواع محیط های مایع
- ✓ جوشکاری لیزری همجنس و ناهمجنس
- ✓ روکش سازی لیزری، آلیاژسازی سطحی با استفاده از لیزر
- ✓ ساخت افزایشی و ترمیم و بازسازی قطعات فولادی و سوپرآلیاژ با استفاده از لیزر
- ✓ سخت کاری سطحی آلیاژهای آهن با استفاده از لیزرهای مختلف

مقالات چاپ شده:

Publications of M.J. Torkamany

ISI Cited Journal Papers:

1- **M.J. Torkamany**, M. Kavian , M. Zand; “Experimental Study of Sealed off operation of a High Repetition Rate TEA CO₂ Laser”; **Laser Physics Letters Vol. 3(10)**, P. 480-484, (2006).

DOI: [10.1002/lapl.200610042](https://doi.org/10.1002/lapl.200610042)

2- **M.J.Torkamany**, M.J. Hamed, F. Malek, and J. Sabbaghzadeh; “The effect of process parameters on keyhole welding with a 400W Nd:YAG pulsed laser”, **Journal of Physics D: Applied Physics, Vol. 39(21)**, P.4563-4567 (2006).

DOI: [10.1088/0022-3727/39/21/009](https://doi.org/10.1088/0022-3727/39/21/009)

3- J. Sabbaghzadeh, S. Dadras, and **M. J. Torkamany**; “Comparison of Pulsed Nd:YAG Laser Welding Qualitative Features with Plasma Plume Thermal Characteristics”; **Journal of Physics D: Applied Physics, Vol. 40(4)**, P.1047-1051 (2007).

DOI: [10.1088/0022-3727/40/4/019](https://doi.org/10.1088/0022-3727/40/4/019)

4- F. Malek Ghaini, M. J. Hamed, **M. J. Torkamany**, J. Sabbaghzadeh; “Weld Metal Microstructural Characteristics in Pulsed Nd:YAG Laser Welding”; **Scripta Materialia, Vol. 56 (11)**, P. 944-948 (2007).

DOI:10.1016/j.scriptamat.2007.02.019

5- J. Sabbaghzadeh, M. Azizi, and **M. J. Torkamany**; “Numerical and Experimental Investigation of Seam Welding With a Pulsed Laser”; **Optics and Laser Technology, Vol. 40(2)**, P.289-296 (2008)

DOI: 10.1016/j.optlastec.2007.05.005

6- J. Sabbaghzadeh, M. J. Hamedi, F. Malek, **M. J. Torkamany** ; “Effect of process parameters on melting ratio in overlap pulsed laser welding”; **Metallurgical and Materials Transactions B, Vol. 39(2)**, P.340-347 (2008).

DOI: 10.1007/s11663-008-9137-7

7- S. Dadras, **M. J. Torkamany**, J. Sabbaghzadeh ; “Spectroscopic Characterization of Low-Nickel Copper Welding with Pulsed Nd:YAG Laser”; **Optics and Lasers in Engineering, Vol. 46(10)**, P.769-776 (2008).

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8-M. Hoseinpour Gollo, H. Moslemi Naeni, G.H. Liaghat, **M. J. Torkamany** , S. Jelvani, V. Panahizade; “An experimental study of sheet metal bending by pulsed Nd:YAG laser with DOE method”; **International Journal of Materials Forming, Vol. 1 (Sup. 1)**, P.137-140 (2008).

DOI: 10.1007/s12289-008-0010-7

9- J. Sabbaghzadeh, P. Jafakhani, S. Dadras, **M. J. Torkamany**; “Synthesis of multi-wall carbon nanotubes by copper vapor laser”; **Applied Physics A, Vol. 94(2)**, P.293-297 (2009).

DOI: 10.1007/s00339-008-4788-4

10- S. Dadras, **M. J. Torkamany**, J. Sabbaghzadeh; “Characterization and Comparison of Iron and Aluminum Laser Ablation with Time-Integrated Emission Spectroscopy of Induced Plasma”; **Journal of Physics D: Applied Physics, Vol. 41(22)** 225202 (7pp) (2008).

DOI: 10.1088/0022-3727/41/22/225202

11- M. Jandaghi, P. Parvin, **M. J. Torkamany**, J. Sabbaghzadeh; “Alloying element losses in pulsed Nd:YAG laser welding of Stainless Steel-316”; **Journal of Physics D: Applied Physics, Vol. 41(23)** 235503 (9pp) (2008).

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12- S. M. Mousavizade, F. Malek Ghaini, **M.J. Torkamany**, J. Sabbaghzadeh, A. Abdollahzadeh; “Effect of severe plastic deformation on grain boundary liquation of a nickel base superalloy”; **Scripta Materialia, Vol.60(4)**, P. 244-247 (2009).

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13- S. Dadras, P. Jafakhani, **M.J. Torkamany**, J. Sabbaghzadeh; “Effects of ultrasound radiation on the synthesis of laser ablated gold nanoparticles”; **Journal of Physics D: Applied Physics, Vol. 42(2)** 025405 (5pp) (2009).

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14- A. Vaziri, H. R. Shahverdi, S .G. Shabestari, **M. J. Torkamany**; “Effect of beam interaction time on laser alloying with pulsed Nd:YAG laser”; **Materials Science and Technology, Vol. 25(10)** P. 1234-37 (2009).

DOI: 10.1179/174328408X372065

- 15- M. Sheikhi, F. Malek Ghaini, **M.J. Torkamany**, J. Sabbaghzadeh; “Characterization of solidification cracking in pulsed Nd:YAG laser welding of 2024 aluminum alloy”; **Science and Technology of Welding and Joining**, Vol. **14(2)** P. 161-169 (2009).
[DOI: 10.1179/136217108X386554](https://doi.org/10.1179/136217108X386554)
- 16- A. Vaziri, H. R. Shahverdi, **M. J. Torkamany**, S .G. Shabestari; “Effect of laser parameters on properties of surface alloyed Al substrate with Ni”; **Optics and Lasers in Engineering**, Vol. **47(9)**, P. 971-975 (2009).
[DOI: 10.1016/j.optlaseng.2009.04.007](https://doi.org/10.1016/j.optlaseng.2009.04.007)
- 17- F. Malek Ghaini, M. Sheikhi, **M.J. Torkamany**, J. Sabbaghzadeh; “The relation between liquation and solidification cracks in pulsed laser welding of 2024 aluminum alloy”; **Materials Science & Engineering A**, Vol. **519(1-2)** P.167-171 (2009).
[DOI: 10.1016/j.msea.2009.04.056](https://doi.org/10.1016/j.msea.2009.04.056)
- 18- B. Ahmadi, **M.J. Torkamany**, B. Jaleh, J. Sabbaghzadeh; “Theoretical Comparison of Oxygen Assisted Cutting by CO₂ and Yb:YAG Fiber Lasers”; **Chinese Journal of Physics**, Vol. **47(4)** P.465- 475 (August, 2009).
- 19- M. Jandaghi, P. Parvin, **M. J. Torkamany**, J. Sabbaghzadeh; “Measurement of the composition change of Al5754 alloy during long pulsed Nd:YAG laser welding based on LIBS”; **Journal of Physics D: Applied Physics**, Vol. **42(20)** 205301 (8pp) (2009)
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- 20- **M.J. Torkamany**, S. Tahamtan, J. Sabbaghzadeh; “Dissimilar welding of carbon steel to 5754 aluminum alloy by Nd:YAG pulsed laser”; **Materials and Design**, Vol. **31(1)** P.458-465 (2010).
[DOI: 10.1016/j.matdes.2009.05.046](https://doi.org/10.1016/j.matdes.2009.05.046)
- 21- B. Mahmoudi, **M.J. Torkamany**, A.R. Sabour Aghdam, J. Sabbaghzadeh; “Laser Surface Hardening of AISI 420 Stainless Steel treated by Pulsed Nd:YAG Laser”; **Materials and Design**, Vol. **31(5)** P.2553-2560(2010).
[DOI: 10.1016/j.matdes.2009.11.034](https://doi.org/10.1016/j.matdes.2009.11.034)
- 22- P. Jafakhani, S. Dadras, **M.J. Torkamany**, J. Sabbaghzadeh; “Synthesis of Nanocrystalline Titania in Pure Water by Pulsed Nd:YAG Laser”; **Applied Surface Science**, Vol. **256(12)** P.3817-3821(2010).
[DOI: 10.1016/j.apsusc.2010.01.032](https://doi.org/10.1016/j.apsusc.2010.01.032)
- 23-S. A. Vaziri, H. R. Shahverdi, S .G. Shabestari, K. Hazeli, **M. J. Torkamany**; “Effect of re-scanning on tribological characterization of laser surface alloyed layers”; **Materials and Design**, Vol. **31(8)** P.3875-79(2010).
[DOI: 10.1016/j.matdes.2010.02.040](https://doi.org/10.1016/j.matdes.2010.02.040)
- 24- M. Ahmadi, M.R.Erfan, **M. J. Torkamany**, Gh.A.Safian; “The effect of interaction time and saturation of rock on specific energy in ND:YAG laser perforating”; **Optics and Laser Technology**, Vol. **43(1)**, P.226-231 (2011).
[DOI: 10.1016/j.optlastec.2010.06.018](https://doi.org/10.1016/j.optlastec.2010.06.018)
- 25- M. J. Hamedi, **M.J. Torkamany**, J. Sabbaghzadeh; “Effect of pulsed laser parameters on in-situ TiC synthesis in laser surface treatment”; **Optics and Lasers in Engineering**, Vol. **49(4)**, P. 557-63 (2011).
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- 26- B. Mahmoudi, **M.J. Torkamany**, A.R. Sabour Aghdam, J. Sabbaghzadeh; “Effect of laser surface hardening on the hydrogen embrittlement of AISI 420 martensitic stainless steel”; **Materials and Design**, Vol. **32(5)** P.2621-27 (2011).
[DOI: 10.1016/j.matdes.2011.01.028](https://doi.org/10.1016/j.matdes.2011.01.028)
- 27- P. Jafakhani, **M.J. Torkamany**, S. Dadras, A. Chehrehgani, J. Sabbaghzadeh; “Necklace Shaped Au-Ag Nanoalloys: Laser Assisted Synthesis and Nonlinear Optical Properties”; **Nanotechnology**, Vol. **22(23)** 235703 (7pp) (2011).
[DOI: 10.1088/0957-4484/22/23/235703](https://doi.org/10.1088/0957-4484/22/23/235703)
- 28- B. Abdolahi, H. R. Shahverdi, **M. J. Torkamany**, M. Emami; “ Improvement of the corrosion behavior of low carbon steel by laser surface alloying”; **Applied Surface Science**, Vol. **257(23)** P. 9921-24 (2011).
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