

## Publications

### 2024

1. IDRISSE, Siham, OUBLA, M'hamed EDFOUF, Zineb, EL MOURSLI, Fouzia Cherkaoui, et al. Investigation of the lithiation mechanism of tin phosphite  $\text{SnHPO}_3$  as anode for Lithium-ion batteries. *Journal of Energy Storage*, **2024**, vol. 75, p. 109639.
2. MARRI, Imane, EDFOUF, Zineb, CABALLERO, Alvaro, et al. Valorisation of argan seeds: Production of cathode material for high-performance lithium-sulphur batteries. *Journal of Energy Storage*, **2024**, vol. 82, p. 110518.

### 2023

3. Juanita Hidalgo, **Lahoucine Atourki**, Ruipeng Li, Andrés-Felipe Castro-Méndez, Sanggyun Kim, Emmet A Sherman, Alexander S Bieber, Meng-ju Sher, Lea Nienhaus, Carlo AR Perini, Juan-Pablo Correa-Baena, Bulky cation hinders undesired secondary phases in  $\text{FAPbI}_3$  perovskite solar cells, **Materials Today** 68 (2023) 13-21
4. H Jebari, E Salmani, **L Atourki**, N Tahiri, H Ez-Zahraouy, Various dopant elements impact on the density of state of ternary  $\text{CuSbSe}_2$  chalcostibite: A theoretical study, *Journal of Solid State Chemistry* 324 (2023) 124118
5. M Ouafi, **L Atourki**, D Barrit, R Fath Allah, H Ouaddari, A Ihlal, Structural and optical characterization of  $\text{CH}_3\text{NH}_3\text{PbX}_3$  (X= I, Br and Cl) powder as precursor materials for perovskite based optoelectronic devices, **Materials Chemistry and Physics** 301 (2023) 127600
6. EL-Bey, **A., Dinia, S.**, El Bahraoui, T., L. Boudad, M; Taibi, **Belayachi, A., Abd-Lefdil, M.** Phase transitions in multiferroic  $\text{Bi}_{1-x}\text{Eu}_x\text{FeO}_3$  synthesized by sol-gel method **Physica Scripta**, 2023, 98(2), 025015
7. Chfii, H., Bouich, A., Soucase, B.M. , **Abd-lefdil, M.** A new approach for growing high-quality delafossite  $\text{CuCoO}_2$  films by spray pyrolysis through the optimization of the Cu/Co ratio **Optical Materials**, 2023, 135, 113229
8. **Kaoutar Ouali.** (2023). Assessment of the mixed local climate zones as the best design for future eco-districts in sub-humid climate: A case of rabat. **International Journal of Sustainable Building Technology and Urban Development**, 14(1), 3-17. doi:10.22712/susb.20230002.
9. **B. Lamrani**, A. Belcaid, BE. Lebrouhi, JM. Khodadadi, T. El Rhafiki: Dynamic thermal analysis of a coupled solar water heaters-thermal storage tank for solar powered district heating networks, **Journal of Energy Storage** (2023).
10. **B. Lamrani**, A. Belcaid, BE. Lebrouhi, T. El Rhafiki, T Kousksou: Numerical investigation of a latent cold storage system using shell-and-tube unit. **Energy Storage and Saving** (2023).

11. A. Ajbar, **B. Lamrani**, E. Ali :Dynamic Investigation of a Coupled Parabolic Trough Collector–Phase Change Material Tank for Solar Cooling Process in Arid Climates. **Energies** (2023).
12. O. Rejeb, **B. Lamrani**, R. Lamba, T. Kousksou, T. Salameh, A. Jemni, AK. Hamid, M. Bettayeb, C. Ghenai: Numerical investigations of concentrated photovoltaic thermal system integrated with thermoelectric power generator and phase change material. **Journal of Energy Storage**, (2023)
13. Ounza, Y., Ouahbi, S. E., Moubah, R., Lassri, M., Sajieddine, M., Oubla, M., ... & Lassri, H. (2023). Critical behavior of  $\text{LaBiCaMn}_2\text{O}_7$  and its relation with magnetocaloric effect. *Applied Physics A*, 129(6), 418.
14. AMARRAY, Amina, SALMI, Mehdi, OUBLA, M hamed, HLIL, El-Kebir, et al. Reduction of cadmium content in 29% and 54%  $\text{P}_2\text{O}_5$  phosphoric acid by manganese oxide material birnessite-type  $\text{Na-MnO}_2$ . *Desalination*, 2023, vol. 560, p. 116677.
15. M'hamed Oubla, Yousra Ounza, Mohammed Lamire, Meryem Moutataouia, Brahim Elouadi, Zineb Edfouf, Nami Nakamori, Abderrahim Boutahar, Hassan Lassri & El-Kebir Hlil, Investigation of structural, magnetic, and electrical properties of layered perovskite  $\text{Sm}_{1.5-x}\text{Sr}_{1+x}\text{Ba}_{0.5}\text{Mn}_2\text{O}_7$  (with  $0 \leq x \leq 0.3$ ), *Applied Physics A* volume 129, Article number: 574 (2023).

## 2022

1. Annealing effect on one step electrodeposited  $\text{CuSbSe}_2$  thin films, Abouabassi, K.; Atourki, L.; Sala, A.; Ouafi, M.; Boukaddat, L.; Ait Hssi, A.; Labchir, N.; Bouabid, K.; Almaggoussi, A.; Gilioli, E.; **Coatings**, 12, 1, 75, 2022.
2. Mouhib, H.; Alt Wahmane, Y.; **Atourki, L.**; Elfanaoui, A.; Ihlal, A.; Bouabid, K.; Numerical investigation of eco-friendly  $\text{MASnI}_3$  perovskite-based solar cell: effect of defect density and hole transport layer; Modelling and Simulation in **Materials Science and Engineering**, 30, 3, 35011, 2022.
3. Comparison study between  $\text{ZnO}$  and  $\text{TiO}_2$  in  $\text{CuO}$  based solar cell using SCAPS-1D; Ait-Wahmane, Y.; Mouhib, H.; Ydir, B.; Ait Hssi, A.; **Atourki, L.**; Ihlal, A.; Bouabid, K.; **Materials Today: Proceedings**, 52, 166-171, 2022.
4. Tihane, A; **Atourki, L.**; Najih, H; El Hamri, L; Bouabid, K; Ihlal, A; Comparative Study of Structural, Optical, and Morphological Properties of SILAR and Electrodeposition Grown  $\text{ZnO}$  and Al:  $\text{ZnO}$  Nanostructures; *Surface Engineering and Applied Electrochemistry*, 58, 1, 31-40, 2022.
5. Abouabassi, K; Ouafi, M; Hssi, A Ait; **Atourki, L** et al., Investigation on electrochemical deposition of  $\text{Sb}_2\text{Se}_3$  thin films in aqueous acidic medium; **Thin Solid Films**, 758, 139452, 2022.
6. **Zoubir, O.**; **Atourki, L.**; Ait Ahsaine, H.; BaQais, A.; Current state of copper-based bimetallic materials for electrochemical  $\text{CO}_2$  reduction: a review; *RSC advances*, 12, 46, 30056-30075, 2022.
7. Abouabassi, K.; Sala, A.; **Atourki, L** et al., Electrodeposited  $\text{CuSbSe}_2$  thin films based solar cells on various substrates.; *Journal of Nanoparticle Research*, 24, 11, 2022.

8. Lebrouhi, B.E., **Lamrani, B.**, Ouassaid, M., **Abd-Lefdil M.**, Maaroufi, M., Kousksou, T. Low-cost numerical lumped modelling of lithium-ion battery pack with phase change material and liquid cooling thermal management system, **Journal of Energy Storage**, 2022, 54, 105293
9. Boudad, L., Taibi, M., Belayachi, W., **Abd-Lefdil, M.**, Sajjeddine, M., Effect of rare earth on structural, morphological, vibrational, magnetic and dielectric properties of  $\text{RFe}_{0.5}\text{Cr}_{0.5}\text{O}_3$  (R = Nd, Eu) perovskites, **Vacuum**, 2022, 201, 111103
10. Boudad, L., Taibi, M., **Belayachi, W.**, **Abd-Lefdil, M.**, Investigation of magnetic, dielectric, optical, and electrical properties of Fe half-doped  $\text{PrCrO}_3$  perovskite, **Journal of Solid State Chemistry**, 2022, 309, 122933
11. **Battas, M.**, El Jald, E.M., Soumahoro, I., **Regragui M.**, **Belayachi A.**, **Atourki, L.**, **Abd-Lefdil, M.**, Light scattering effect of iron doped zinc oxide thin films through structural and optical analysis, **Optik**, 2022, 255, 168704
12. Boudad, L., Taibi, M., Belayachi, A., **Abd-Lefdil, M.**, Sol-gel synthesis and characterization of novel double perovskites  $\text{RBaFeTiO}_6$  (R= Pr, Nd), **Ceramics International**, 2022, 48(5), pp. 6087–6096
13. Oulad Elhmaidi, Z., Saucedo, E., **Abd-Lefdil, M.**, El Khakani, M.A., Substrate temperature optimization of pulsed-laser-deposited and in-situ Zn supplemented-CZTS films and their integration into photovoltaic devices, **Journal of Alloys and Compounds**, 2022, 893, 162292
14. Belayachi W., Ferblantier, G., Fix, T., Schmerber G., Rehspringer J.L., Heiser T., Slaoui A., **Abd-Lefdil, M.**, Dinia, A.,  $\text{SnO}_2$  Films Elaborated by Radio Frequency Magnetron Sputtering as Potential Transparent Conducting Oxides Alternative for Organic Solar Cells, **ACS Applied Energy Materials**, 2022, 5(1), pp. 170–177
15. Elaboration, characterization, and giant dielectric permittivity in solid state synthesized Fe half-doped  $\text{LaCrO}_3$  perovskite, Boudad, L., Taibi, M., Belayachi, A., **Abd-lefdil, M.**, **Materials Today: Proceedings**, 2022, 58, pp. 1108–1113
16. Structural, morphological, thermal, and oxygen-vacancy-related dielectric relaxation behaviors in  $\text{EuFeO}_3$  perovskite, Boudad, L., Taibi, M., Belayachi, A., **Abd-lefdil, M.**, **Materials Today: Proceedings**, 2022, 58, pp. 1028–1032.
17. M. Hlimi, B.E. Lebrouhi, A. Belcaid, **B. Lamrani**, L. Balli, M.C. Ndukwu, T. El Rhafiki, T. Kousksou: A numerical assessment of a latent **heat storage system for district heating substations**. *Journal of Energy Storage*, (2022).
18. E.H. Sebbar , **B. Lamrani** , T.El Rhafiki , D.Achemlal, Y.Oihi, T. Kousksou: Latent heat storage system integrating phase change material in spherical capsules: A comparative study between three dynamic physical models. **Journal of Energy Storage**, (2022)
19. **B. Lamrani**, Y. Elmrabet, M. Ibeh, N. Bekkioui, P. Etim, A. Chahboun, A. Draoui, M.C. Ndukwu: Energy, economic analysis and mathematical modelling of mixed-mode solar drying of potato slices with thermal storage loaded V-groove collector: Application to Maghreb region. **Renew. Energy**. 200 (2022).

20. **B. Lamrani**, N. Bekkioui, M. Simo-tagne, and M. Chinenye, Recent progress in solar wood drying : An updated review, **Drying Technology** (2022).
21. B E Lebrouhi, S. Baghi, **B. Lamrani**, E. Schall, T. Kousksou Critical materials for electrical energy storage : Li-ion batteries. **Journal of Energy Storage**, (2022).
22. A. El Ouali, Y. Khattari, **B. Lamrani**, T. El Rhafiki, Y. Zeraoui, T. Kousksou, Apparent heat capacity method to describe the thermal performances of a latent thermal storage system during discharge period. **Journal of Energy Storage**, 43 (2022).
23. BE. Lebrouhi, JJ. Djoupo, **B. Lamrani**, K Benabdelaziz, T Kousksou, Global hydrogen development-A technological and geopolitical overview, **International Journal of Hydrogen Energy**, 47 (2022).
24. B.E. Lebrouhi<sup>1</sup>, E.Schall, **B. Lamrani**, Y.Chaibi, T. Kousksou, Energy Transition in France, **Sustainability** (2022)
25. B.Haruna, T. P. Mofokeng, J.J. Ogada, O. Zoubir, A. Lallaoui, F. Cherkaoui EL Moursli, Z. Edfouf, K.I. Ozoemena. Recent advances in the cathode materials and solid-state electrolytes for lithium sulfur batteries. *Electrochemistry Communications*. Volume 136, March (2022), 107248.
26. IDRISSE, Siham, EDFOUF, Zineb, LALLAOUI, Abdelfettah, et al. Electrochemical Performances of Tin Phosphite Electrode for Lithium Ion Batteries. *Surface Engineering and Applied Electrochemistry*, 2022, vol. 58, no 5, p. 548-554.
27. Y. Ounza, R. Moubah, M. Oubla, A. Elouafi, M. Moutatouia, M. Lamire, EK. Hlil, H. Lassri. Transport-magnetism correlation in layered perovskite manganite LaCaBiMn<sub>2</sub>O<sub>7</sub> . *Solid State Communications*. Volume 350, July (2022), 114785.
28. MOUTATAOUIA, M., OUBLA, M., TAMRAOUI, Y., et al. Correlation between crystal structure, optical and chromatic properties of Diphosphate based Nickel and Magnesium. *Journal of Molecular Structure*, 2022, vol. 1268, p. 133689.

## 2021

1. **L Atourki**, M Bernabé, M Makha, K Bouabid, **M Regragui**, A Ihlal, **M. Abd-Lefdil** and M. Mollar, Effect of doping on the phase stability and photophysical properties of CsPbI<sub>2</sub>Br perovskite thin films, **RSC Advances** 11 (2021), 1440-1449
2. **L. Atourki**, M. Ouafi, M. Makha, B. Mari, **M. Regragui**, A. Ihlal, **M. Abd-Lefdil** and M. Mollar, Impact of Li doping on the photophysical properties of perovskite absorber layer FAPbI<sub>3</sub>, **J. Alloy. Comp.** 850, 156696 (2021)
3. A synopsis of progressive transition in precursor inks development for metal halide perovskites-based photovoltaic technology Kim, Cuc Mai Thi; **Atourki, L.**; Ouafi, M.; Hashmi, S. G.; **Journal of Materials Chemistry A**, 9, 47, 26650-26668, 2021.
4. Khattak, Y. H.; Baig, F.; Shuja, A.; **Atourki, L.**; Riaz, K.; Soucase, Bernabe M, Device optimization of PIN structured perovskite solar cells: impact of design variants; **ACS Applied Electronic Materials**, 3, 8, 3509-3520, 2021.
5. B Mari, **L Atourki**, S Ullah, ME Touhami, Shedding Light on the Effect of Diethyl Ether Antisolvent on the Growth of (CH<sub>3</sub>NH<sub>3</sub>)PbI<sub>3</sub> Thin Films, *Journal of The Minerals, Metals & Materials Society* 73 (2021) 1-7

6. S Ullah, B Marí, **L Atourki**, ME Touhami, One-step synthesis of FA1-xGAxPbI3 perovskites thin film with enhanced stability of alpha ( $\alpha$ ) phase, **Materials Chemistry and Physics** 258 (2021) 123973
7. **M. Battas, M.; Atourki, L.**; Bouabid, K.; Ihlal, A.; **Abd-Lefdil, M.**; **Regragui, M.**; Investigations on the Growth Mechanism of Nanostructured ZnO: Shedding Light on the Effect of Al 3+ Doping; *Surface Engineering and Applied Electrochemistry*, 579, 2021
8. **K. Ouali**, K. El Harrouni and M. Larbi Abidi, "Characterization of Urban Heat Island and outdoor thermal comfort mapping: case of Rabat," 2021 9th International Renewable and Sustainable Energy Conference (IRSEC), Morocco, 2021, pp. 1-6, doi: 10.1109/IRSEC53969.2021.9741192.
9. **B Lamrani**, BE. Lebrouhi, Y. Khattari, T. Kousksou, A simplified thermal model for a lithium-ion battery pack with phase change material thermal management system, **Journal of Energy Storage**, 43 (2021).
10. BE Lebrouhi, Y Khattari, **B. Lamrani**, M. Maaroufi, Y. Zeraouli, T Kousksou Key challenges for a large-scale development of battery electric vehicles: A comprehensive review, **Journal of Energy Storage**, 43 (2021).
11. **B. Lamrani**, K. Tarik, Numerical investigation of a shell-and-tube latent heat thermal energy storage system for urban heating network, **Journal of Energy Storage**, 43 (2021).
12. **B. Lamrani**, F. Kuznik, A. Ajbar, M. Boumaza, Energy analysis and economic feasibility of wood dryers integrated with heat recovery unit and solar air heaters in cold and hot climates, **Energy**. 228 (2021).
13. **B. Lamrani**, A. Draoui, F. Kuznik, Thermal performance and environmental assessment of a hybrid solar-electrical wood dryer integrated with Photovoltaic/Thermal air collector and heat recovery system, **Solar Energy**. 221 (2021)
14. M. Guerguer, S. Naamane, Z. Edfouf, O. Raccurt, H. Bouaouine, Chemical degradation and color changes of paint protective coatings used in solar glass mirrors. *Coatings* , 11(4), 476, (2021)
15. A. Criado, P. Lavela, G. Ortiz, J.L. Tirado, C. Perez-Vicente, N. Bahrou, Z. Edfouf, Highly dispersed oleic-induced nanometric C@Na3V2(PO4)2F3 composites for efficient Na-ion batteries. *Electrochimica Acta* 332, 135502, (2020).
16. A. Criado, P. Lavela, G. F. Ortiz, J.L. Tirado, S. Gzouli, Z. Edfouf, C. Pérez-Vicente, CTAB-Assisted Synthesis of C@Na3V2(PO4)2F3 With Optimized Morphology for Application as Cathode Material for Na-Ion Batteries. *Front. Phys.* Volume 7 Article N°207 (2020).
17. A. Lallaoui, Z. Edfouf, O. Benabdallah, S. Idrissi, M. Abd-Lefdil, F. Cherkaoui El Moursli. New titanium (III) phosphite structure and its application as anode for lithium ion batteries. *International Journal of Hydrogen Energy*, 45, 19, 11167-11175 (2020).



## 2020

1. Z.O. Elhmaidi, **M. Abd-Lefdil** and El Khakani "Photoconversion optimization of pulsed-laser-deposited p-CZTS/n-Si-nanowires heterojunction-based photovoltaic devices" **Nanomaterials** 10(7), 1393 (2020).
2. I. Anefnaf et al "Polyethylenimine-Ethoxylated Interfacial Layer for Efficient Electron Collection in SnO<sub>2</sub>-Based Inverted Organic Solar Cells" **Crystals** 10 (9), 731 (2020).
3. Ait Hssi, **Atourki, L** et al., Electrodeposition of oriented ZnO nanorods by two-steps potentiostatic electrolysis: Effect of seed layer time; *Solid State Sciences*, 104, 106207, 2020.
4. Ait hssi, A.; Amaterz, E.; Labchir, N.; **Atourki, L.**; Bouderbala, I.; Elfanaoui, A.; Benlhachemi, A.I; Ihlal, A.; Bouabid, K., Electrodeposited ZnO nanorods as efficient photoanodes for the degradation of rhodamine B; *Physica status solidi (a)*, 217, 17, 2000349, 2020.
5. Hssi, A Ait; **Atourki, L.** et al., Structural and optical properties of electrodeposited Cu<sub>2</sub>O thin films, *Materials Today: Proceedings*, 22, 89-92, 2020.
6. L. Boudad,, M. Taibi, **W.Belayachi**, M. Sajjeddine and **M. Abd-Lefdil** "High temperature dielectric investigation, optical and conduction properties of GdFe<sub>0.5</sub>Cr<sub>0.5</sub>O<sub>3</sub> perovskite" **Journal of Applied Physics** 127, 174103 (2020).
7. **A. Lallaoui, Z. Edfouf**, O. Benabdallah, S. Idrissi, **M. Abd-Lefdil, F. Cherkaoui El Moursli**. "New titanium (III) phosphite structure and its application as anode for lithium ion batteries" *International Journal of Hydrogen Energy* 45 (19), 11167 (2020)
8. **Z.O. Elhmaidi**, R. Pandiyan, **M. Abd-Lefdil**, E. Saucedo, and M. A. El Khakani "In-situ tuning of the zinc content of pulsed-laser-deposited CZTS films and its effect on the photoconversion efficiency of p-CZTS/n-Si heterojunction photovoltaic devices" **Applied Surface Science** 507, 145003 (2020)
9. A. Criado, P. Lavela, G. Ortiz, J.L. Tirado, C. Perez-Vicente, N. Bahrou, **Z. Edfouf**, Highly dispersed oleic-induced nanometric C@Na<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>F<sub>3</sub> composites for efficient Na-ion batteries. **Electrochimica Acta** 332, 135502 (2020)
10. L. Boudad, M. Taibi, **A. Belayachi, M. Abd-lefdil** "Dielectric relaxation, electrical conductivity and optical studies of solid-state synthesized EuCrO<sub>3</sub>" *Journal of Materials Science: Materials in Electronics* (2020). doi.org/10.1007/s10854-019-02533-0
11. **A. El hat**, I. Chaki, R. Essajai, A. Mzerd, G. Schmerber, **M. Regragui, A. Belayachi**, Z. Sekkat, **A. Dinia**, A. Slaoui and **M. Abd-Lefdil**"Growth and Characterization of (Tb,Yb) Co-Doping Sprayed ZnO Thin Films"*Crystals* 10 (3), 169 (2020) doi:10.3390/cryst10030169
12. N. Benhaddou, S. Aazou; Fonoll Rubio, Robert; Sánchez, Yudania; Giraldo, Sergio; Guc, Maxim; Calvo-Barrio, Lorenzo; Izquierdo-Roca, Victor; **M. Abd-Lefdil**, Z. Sekkat and E. Saucedo "Uncovering details behind the formation mechanisms of Cu<sub>2</sub>ZnGeSe<sub>4</sub> photovoltaic absorber" *Journal of Materials Chemistry C* (2020)10; DOI: 10.1039/c9tc06728k
13. A. Ait Hssi , **L. Atourki** , N. Labchir, M. Ouafi, K. Abouabassi, A. Elfanaoui, A. Ihlal, S. Benmokhtar, K. Bouabid "High-quality Cu<sub>2</sub>O thin films via electrochemical synthesis under a variable applied potential" *Journal of Materials Science: Materials in Electronics* (2020) doi.org/10.1007/s10854-020-02976-w
- 14.

## 2019

- L. Boudad, M. Taibi, W. Belayachi, Z. Edfouf, F. Cherkaoui El Moursli, **M. Regragui** and **M. Abd-Lefdil** " Investigation of structural and magnetic properties of  $GdFe_{0.5}Cr_{0.5}O_3$  Perovskite prepared by solid state route" *Journal of Superconductivity and Novel Magnetism* 33(5), 1365-1368 (2019)
- A. Criado, P. Lavela, G. F. Ortiz, J.L. Tirado, S. Gzouli, Z. Edfouf, C. Pérez-Vicente, CTAB-Assisted Synthesis of  $C@Na_3V_2(PO_4)_2F_3$  With Optimized Morphology for Application as Cathode Material for Na-Ion Batteries. *Front. Phys.* Volume 7 Article N°207 (2019)
- M. Bouhbou, R. Moubah, K. Bakkari, H. Zaari, A. Sabrallah, F. Khelfaoui, N. Mliki, M. Abid, A. Belayachi, H. Lassri "Magnetic, half-metallicity and electronic studies of  $Cd_{1-x}Zn_xCr_2Se_4$  chromium seleno-spinels" *Journal of Magnetism and Magnetic Materials* 476, 86 (2019)
- Bouzida, S., Benamar, E.B., Battas, M., Guy Schmerber, Zouheir Sekkat, Aziz Dinia, Abdelilah Slaoui, Abd-Lefdil, M., Regragui, M. "Effect of potassium cyanide etching on structural, optical and electrical properties of  $Cu_2ZnSnS_4$  thin films deposited by modified spray pyrolysis" *Surface Review and Letters* 26 (9), 1 (2019)
- H. Zitouni, A. Alami Merrouni, M. Regragui, A. Bouaichia, C. Hajjaja, A. Ghenniouia and B. Ikkena Experimental investigation of the soiling effect on the performance of monocrystalline photovoltaic systems' *Energy Procedia* 157, 1011-1021 (2019)
- L. Boudad, M. Taibi, A. Belayachi, M. Abd-lefdil "Structural, morphological, spectroscopic, and dielectric properties of  $SmFe_{0.5}Cr_{0.5}O_3$ " *Materials today: Proceedings* 13 (3), 646 (2019).

2018

Zaarour, H., Idrissi, O., Kityk, I.V., (...), Taibi, M., Abd-Lefdil, M. "Laser operated nonlinear optical studies of  $BiFe_{0.9}Cr_{0.1}O_3$  and  $BiFe_{0.9}Al_{0.1}O_3$  multiferroics" *Materials Chemistry and Physics* 218, pp. 28-33 (2018)

Improving UV stability of  $MAPbI_3$  perovskite thin films by bromide incorporation, Ouafi, M.; Jaber, B.; Atourki, L.; Bekkari, R.; Laânab, L.; *Journal of Alloys and Compounds*, 746, 391-398, 2018.

- Lallaoui, A., Edfouf, Z., Benabdallah, O., (...), Abd-Lefdil, M., El Moursli, F.C. " $Ti_2(HPO_3)_3$ , a New Active Material for Lithium Ion Batteries" *Proceedings of 2017 International Renewable and Sustainable Energy Conference, IRSEC 2017*, 8477339 (2018)

- El Jald, E.M., Soumahoro, I., Schmerber, G., (...), Belayachi, A., Abd-Lefdil, M. "Effect of Fe Doping on Structural, Optical and Electrical Properties of ZnO Thin Films" *Proceedings of 2017 International Renewable and Sustainable Energy Conference, IRSEC 2017* 8477285 (2018)

- Laghfour, Z., Aazou, S., Taibi, M., (...), Abd-Lefdil, M., Sekkat, Z. "Sodium doping mechanism on sol-gel processed kesterite  $Cu_2ZnSnS_4$  thin films Superlattices and Microstructures" 120, pp. 747-752 (2018)

- Nesterenko, D.V., Hayashi, S., Aazou, S., (...), Abd-Lefdil, M., Sekkat, Z. "Absorption Enhancement in Thin-Film Solar Cells with Perforated Holes" *Plasmonics* 3(3), pp. 939-945 (2018)



2017

M. Bouhbou, R.Moubah, W. Belayachi, A. Belayachi, H. Lassri "Effect of Zn substitution on the magnetic properties and magnetocaloric effects in Cd<sub>1-x</sub>Zn<sub>x</sub>Cr<sub>2</sub>Se<sub>4</sub> spinel" Dalton Transactions 46(6), 2007 (2017).

- El Mustapha El Jald; Ibrahima Soumahoro ; Guy Schmerber ; Aziz Dinia ; Zouheir Sekkat ; Mohammed Regragui ; Azzam Belayachi ; Mohammed Abd-Lefdil "Effect of Fe Doping on Structural, Optical and Electrical Properties of ZnO Thin Films" IEEE DOI: 10.1109/IRSEC.2017.8477285 (2017)

- M. Bouhbou, R.Moubah, W. Belayachi, A. Belayachi, L. Bessais, H. Lassri "Magnetic and magnetocaloric properties in sulfospinel Cd<sub>1-x</sub>Zn<sub>x</sub>Cr<sub>2</sub>S<sub>4</sub>" Chemical Physics Letters 688, 84 (2017).

- A. El Fakir, M. Sekkati, G. Schmerber, A. Belayachi, Z. Edfouf, M. Regragui, F. Cherkaoui El Moursli, Z. Sekkat, A. Dinia, A.Slaoui and M. Abd-Lefdil " Influence of rare earth (Nd and Tb) co-doping on ZnO thin films properties" Phys. Status Solidi C, 14(10),1700169 (2017)

- Mouaad Sekkati, Mhamed Taibi, Guy Schmerber, El Bachir Benamar, Mohammed Regragui, Fouzia Cherkaoui El Moursli, Cedric Leuvrey, Zineb Edfouf, Zouheir Sekkat, Aziz Dinia, Abdelilah Slaoui, and Mohammed Abd-Lefdil "The Impact of Na and K on Properties of Cu<sub>2</sub>ZnSnS<sub>4</sub> Thin Films Prepared by Ultrasonic Spray Technique" Phys. Status Solidi C, 14(10),1700170 (2017)

- Spoorthi K, S.Pramodini, I.V.Kityk, M.Abd-Lefdil, M. Sekkati, A. El Fakir, Ashok Rao, Ganesh Sanjeev, P Poornesh "Investigations on nonlinear optical properties of electron beam treated Gd:ZnO thin films for photonics applications" Laser Physics 27 (6), 65403 (2017).

- Nayana Shettigar, Pramodini S, Iwan Kityk, Abd-Lefdil M., Eljald E.M., Regragui M., Albin Antony, ashok rao, Ganesh Sanjeev and P. Poornesh "Tuning the third-order nonlinear optical properties of In:ZnO thin films by 8 MeV electron beam irradiation", Journal of Physics and Chemistry of Solids 110, 260-265 (2017).

- R. Pandiyan, Z. O. Elhmaidi, Z. Sekkat, M. Abd-lefdil, M. A. El Khakani, "Reconstructing the Energy Band Electronic Structure of Pulsed Laser Deposited CZTS Thin Films Intended for Solar Cell Absorber Applications" Applied Surface Science 396, 1562–1570 (2017)

2016

- E.B. Benamar, T. Slimani Tlemçani, F. Cherkaoui El Moursli, M. Taibi , G. Schmerber, Z. Sekkat, A. Dinia, A. Slaoui and M. Abd-Lefdil "Effect of ITO and Mo coated glass

substrates on electrodeposited Cu<sub>2</sub>ZnSnS<sub>4</sub> Thin Films" IEEE 2016, Pages: 79 - 82, DOI: 10.1109/IRSEC.2016.7983888 (2016)

- Mouaad Sekkati, El Bachir Benamar, Taoufik Slimani Tlemçani, Mhamed Taibi, Safae Aazou, Zineb Edfouf, Fouzia Cherkaoui El Moursli, Guy Schmerber, Zouheir Sekkat, Aziz Dinia, Abdelilah Slaoui and Mohammed Abd-Lefdil "Effect of Copper content on Cu<sub>2</sub>ZnSnS<sub>4</sub> thin films prepared by ultrasonic spray technique" IEEE 2016, Pages: 107 - 109, DOI: 10.1109/IRSEC.2016.7983951 (2016)

- Zakaria Oulad Elhmaidi, Rajesh Pandiyan, Mohammed Abd-Lefdil and My Ali El Khakani "Pulsed laser deposition of CZTS thin films, their thermal annealing and integration into n-Si/CZTS photovoltaic devices" IEEE 2016, 130 - 135, DOI: 10.1109/IRSEC.2016.7983988 (2016)

-Samira Bouzida, El Bachir Benamar, Manal Battas, Zakaria Laghfour Zouheir Sekkat, Abdelilah Slaoui, Mohammed Abd-Lefdil and Mohammed Regragui "Preparation and Characterization of Cu<sub>2</sub>ZnSnS<sub>4</sub> thin films deposited by spray assisted CVD process" pages 179 - 181, DOI: 10.1109/IRSEC.2016.7983950 (2016)

- Nada Benhaddou, Ikram Anefnaf, Safae Aazou, Mohammed Abd-Lefdil, Zouheir Sekkat  
"Investigation on Structural and Optical Properties of Organic Photovoltaic Thin Films based MEH-PPV/PCBM", IEEE 2016, Pages: 756 - 759, DOI: 10.1109/IRSEC.2016.7983982 (2016)

- Zakaria Laghfour, Mohammed Bouzbib, Safae Aazou, Mouad Sekkati, Mohammed Abd-lefdil, Mhamed Taibi, Guy Schmerber, Aziz Dinia, Abdelilah Slaoui, Alexander Ulyashin, Zouheir Sekkat "CZTS thin film with simple sol-gel method - Thickness effect on structural and on optical properties of CZTS thin films "IEEE 2016, Pages: 792 - 794, DOI: 10.1109/IRSEC.2016.7983987 (2016)

- Ikram Anefnaf, Nada Benhaddou, Safae Aazou, Mohammed Abd-Lefdil, Zouheir Sekkat "Optical and structural characteristics of M EH -P P V /P 3HT blend with fullerene" IEEE 2015, Pages: 801 - 804, DOI: 10.1109/IRSEC.2016.7983996 (2016)

- T. Ajjammouri, S. Aazou, O. Mahboub, Z. Laghfour, M. Abd-Lefdil, A. Ulyashin, A. Slaoui, Z. Sekkat "Kesterite / wurtzite Cu<sub>2</sub>ZnSnS<sub>4</sub> Nanocrystals: synthesis and characterization for PV applications" IEEE 2016, Pages: 797 - 801, DOI: 10.1109/IRSEC.2016.7983993 (2016)

- O. Benabdallah, Z. Edfouf, A. Lallaoui, I. Saadoune, M. Abd-Lefdil and F. Cherkaoui El Moursli, "Improved electrochemical properties of sol-gel prepared ZnO/Graphene Composite", Solid State Ionics 297, 7-12 (2016)

- T. El Bahraoui, T. Slimani Tlemçani, M. Taibi, H. Zaarour, A. El Bey, A. Belayachi, A. Tiburcio Silver, G. Schmerber, A.M. El Naggat, A.A. Albassam, G.Lakshminarayana , A. Dinia and M. Abd-Lefdil, "Characterization of multiferroic Bi<sub>1-x</sub>Eu<sub>x</sub>FeO<sub>3</sub> powders prepared by sol- gel method" Materials Letters 182, 151-154 (2016)

- A. El-Bey; T. El Bahraoui; M. Taibi; A. Belayachi; M. Abd-Lefdil; A. El-Naggat; A. Albassam; A. Fedorchuk; P. Czaja "Magnetically induced infrared third harmonic

generation in Bi<sub>2</sub>Fe<sub>4</sub>O<sub>9</sub> multiferroics microcrystalline powders" Journal of Alloys and Compounds 684, 412-418 (2016)

- T. El Bahraoui, M. Sekkati, M. Taibi, M. Abd-Lefdil, A.M. El-Naggar, N.S. AlZayed, A.A. Albassam, I.V. Kityk and A. Maciag "Specific features of nonlinear optical properties of Eu<sup>3+</sup> doped BiFeO<sub>3</sub> nanopowders near antiferromagnetic transition" J. Magnetism and Magnetic Materials 398, 127-130 (2016)

- I. Chaki, A. El hat, A. Mzerd, A. Belayachi, M. Regragui, T. Ajjammouri, Z. Sekkat and M. Abd-Lefdil "Physical properties of Gd doped ZnO thin films grown by spray pyrolysis" IEEE, DOI: 10.1109/IRSEC.2015.7455054 (2016)

2015

- Taoufik Slimani Tlemçani, El Bachir Benamar, Fouzia Cherkaoui El Moursli, Faiza Hajji, Zineb Edfouf, Mhamed Taibi, Hicham Labrim, Bouchra Belhorma, Safae Aazou, Guy Schmerber, Karima Bouras, Zouheir Sekkat, Aziz Dinia, Alexander Ulyashin, Abdelilah Slaoui and Mohammed Abd-Lefdil "Deposition Time Effect On The Physical Properties Of Cu<sub>2</sub>ZnSnS<sub>4</sub> (CZTS) Thin Films Obtained By Electrodeposition Route Onto Mo-coated Glass Substrates" Energy Procedia 84, 127-133 (2015)

- T; El Bahraoui, M. Taibi, A.M. El-Naggar, T.S.Tlemçani, A.A. Albassam, M. Abd-Lefdil, I. V. .Kityk, N. S. AlZayed and A.O Fedorchuk, "Multiferroic Eu doped BiFeO<sub>3</sub> microparticle polymer composites as materials for laser induced gratings" Journal of Materials Science: Materials in Electronics, DOI: 10.1007/s10854-015-3671-2 (2015)

- Aloufy, A., Ebothé, J., Dumelié, N., Chaki, I., Abd-Lefdil, M., Alzayed, N.S., El-Naggar, A.M., Albassam, A.A., Kityk, I.V. "Optically stimulated optical effects in the ZnO:Tm nanorods" Physica E: Low-Dimensional Systems and Nanostructures 73 (13) 96-99 (2015)

- Laghfour, Z., Ajjammouri, T., Aazou, S., Refki, S., Nesterenko, D.V., Rahmouni, A., Abd-Lefdil, M., Ulyashin, A., Slaoui, A., Sekkat, Z. "Structural and opto-electrical properties of Al doped ZnO sputtered thin films" Journal of Materials Science: Materials in Electronics 26 (9) 6730-6735 (2015)

- T. Slimani Tlemçani, T. El Bahraoui, M. Taibi, A. Belayachi, G. Schmerber, A. Dinia and M. Abd-Lefdil "Effect of Nd substitution on physical properties of multiferroic compound BiFeO<sub>3</sub>" J. Sol-gel Sc. Tech. 73, 673-678 (2015)

- K. Nouneh, T. Ajjammouri, Z. Laghfour, A. Maaroufic, M. Abd-Lefdil, D. Chaumont and Z. Sekkat "Structural and spectral properties of ZnO nanorods by wet chemical method for hybrid solar cells applications" Materials Letters 139, 26-30 (2015).

- A.H.Reshak, T. Slimani Tlemçani, T. El Bahraoui, M. Taibi, K.J.Plucinski, A. Belayachi, M. Abd-Lefdil, M.Lis, Z. A. Alahmed, H. Kamarudin, J Chyský, J Bila "Characterization of multiferroic Bi<sub>0.8</sub>RE<sub>0.2</sub>FeO<sub>3</sub> powders (RE = Nd<sup>3+</sup>, Eu<sup>3+</sup>) grown by sol gel method" Materials letters 139, 104-107 (2015).

- A. Elfakir, T. S. Tlemçani, E.B. Benamar, A. Belayachi, E. G-Berasategui, G. Schmerber, M. Balestrieri, S. Colis, A. Slaoui, A. Dinia and M. Abd-Lefdil "Structural, electrical and optical properties of sprayed Nd-F codoped ZnO thin films" *J Sol-Gel Sci Technol* 73, 557–562 (2015)

#### 2014

- I. Chaki, A. Belayachi, T. ElBahraoui, M. Regragui and M. Abd-Lefdil "Semiconducting properties of Tm doped Yb-ZnO films by spray pyrolysis" *European Physical journal: Applied Physics* 68: 30301 (2014)

- I. Soumahoro, S. Colis, G. Schmerber, C. Leuvrey, S. Barre, C. Ulhaq-Bouillet, D. Muller, M. Abd-Lefdil, N. Hassanain, J. Petersen, A. Berrada, A. Slaoui and A. Dinia "Structural, optical, spectroscopic and electrical properties of Mo-doped ZnO thin films grown by RF magnetron sputtering" *Thin Solid Films* 566, 61-69 (2014)

- M. Abd-Lefdil, A. Belayachi, S. Pramodini, P. Poornesh, A. Wojciechowski and A. O. Fedorchuk "Structural, photoinduced optical effects and third-order nonlinear optical studies on Mn doped and Mn-Al codoped ZnO thin films under continuous wave laser irradiation" *Laser Physics* 24, 035404 (2014)

- M. Abd-Lefdil, A. Douayar, A. Belayachi, A. O. Fedorchuk, K. K. Nagaraja, H. S. Nagaraja, S. Pramodini and P. Poornesh, "Third harmonic generation process in Al doped ZnO thin films" *Journal of Alloys and Compounds* 584, 7–12 (2014)

- F. Cherkaoui El Moursli, F. Hajji, K. Nouneh, A. Guessous and M. Abd-Lefdil "Structural characterisation of electrodeposited Nanostructured titanium dioxide thin films on stainless steel and on ITO" *Sensors & Transducers* 27, 137-141 (2014)

- A. Elfakir, A. Douayar, R. Diaz, I. Chaki, P. Prieto, A. Belayachi and M. Abd-Lefdil. "Elaboration and characterization of sprayed Tb-doped ZnO thin films" *Sensors & Transducers* 27, 161-164 (2014)

- A. Douayar,, H. Bihri, A. Belayachi and M. Abd-Lefdil "Structural, optical and electrical properties of transparent conducting oxide based on Al doped ZnO prepared by spray pyrolysis" *Sensors & Transducers* 27, 156-160 (2014)

#### 2013

- M. Bouziane, M. Taibi, A. Boukhari, A. Belayachi, M. Sajieddine "Crystal structure and optical investigation of  $Pb_2Na_{1-x}La_xNb_{5-x}Fe_xO_{15}$  ( $0 \leq x \leq 1$ ) phases" *Journal of Physics and Chemistry of Solids* 74, 272 (2013).

- A. Elfakir, A. Tiburcio Silver, I. Soumahoro, A. Belayachi, A. Douayar and M. Abd-Lefdil "Preparation and characterization of rare-earth doped zinc oxide thin films" *Energy Environ. Focus* 2, 277-279 (2013)

- E. M. El Jald, V.A.Franiv, A. Belayachi and M.Abd-Lefdil "Optically stimulated piezooptical effects in Cu- doped ZnO films" *Optik- International Journal for Light and Electron Optics* 124, 6302– 6304 (2013)

- A. Douayar, M. Abd-Lefdil, K. Nouneh, P. Prieto, R. Diaz, A.O.Fedorchuk and I.V.Kityk "Photoinduced Pockels effect in the Nd doped ZnO oriented nanofilms" *Applied Physics B: Optics and lasers* 110, 419 (2013).

- A. Douayar, P. Prieto, G. Schmerber, K. Nouneh, R. Diaz, I. Chaki, S. Colis, A. El fakir, A. Belayachi, Z. Sekkat, A. Slaoui, A. Dinia and M. Abd-Lefdil "Investigation of the structural, optical and electrical properties of Nd-doped ZnO thin films deposited by spray pyrolysis" *European Physical Journal: Applied Physics* 61, 10304 (2013).

- A. Douayar, A. Belayachi, M. Abd-Lefdil, K. Nouneh, Z. Laghfour, I.V.Kityk, A.Slezak, and R.Miedzinski. "Optical operation by electrooptical features of ZnO nanocrystalline films doped by Tm<sup>3+</sup> ions" *Journal of Alloys and Compounds* 15, 345 (2013)

## 2012

- P. Prieto, V. Nistor, K. Nouneh, M. Oyama, M. Abd-Lefdil and R. Díaz "XPS study of silver, nickel and bimetallic silver-nickel nanoparticles prepared by seed-mediated growth" *Applied Surface Science* 258, 8807 (2012).

## 2011

-A. Douayar, R. Diaz, P. Prieto and Mohammed Abd-Lefdil "Structural, Optical and Electrical Properties of ZnO Sprayed Thin Films Doped with Fluorine" *Advanced Materials Research* 324, 253 (2011)

- A. Douayar , R. Diaz, F.Cherkaoui El Moursli, G. Schmerber and M. Abd-Lefdil "Preparation and characterization of transparent conducting oxides based on zinc oxide co-doped with fluorine and indium" *Sensor Lett.* 9, 2133 (2011)

- K. Nouneh, M. Oyama, R. Diaz, M. Abd-Lefdil, I. Kityk and M. Bousmina, "Nanoscale synthesis and optical features of metallic nickel nanoparticles by wet chemical approaches", *Journal of Alloys and Compounds* 509, 5882 (2011).

-I. Soumahoro, G. Schmerber, A. Douayar, S. Colis, M. Abd-Lefdil, N. Hassanain, A. Berrada, D. Muller, A. Slaoui, H. Rinnert and A. Dinia, "Structural, optical, and electrical properties of Yb-doped ZnO thin films prepared by spray pyrolysis method", *Journal of Applied Physics* 109, 033708 (2011).

- A. Douayar, R. Diaz, F.Cherkaoui El Moursli, G. Schmerber, A. Dinia and M. Abd-Lefdil

"Fluorine-doped ZnO thin films deposited by spray pyrolysis technique" *European Physical journal: Applied Physics* 53, 20501 (2011)

- K. Nouneh, M. Oyama, R. Diaz, M. Abd-Lefdil, I. Kityk and M. Bosmina "An Approach to Surface Functionalization of Indium Tin Oxide for Regular Growth of Silver Nanoparticles and their Optical Features" *Journal of Alloys and Compounds* 509, 2631 (2011)