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Scientific Responsible of MURST-MIUR (PRIN 1998, PRIN 2001, PRIN 20004), UE (SCI-0024 and INTAS 95-1358), MAE (Italy-Romania, Italy-India, Italy-Russia, Italy-Hungary, Italy-Argentina), CRUI (Galileo, Vigoni-DAAD) projects and CNR various contracts and contributions.

Research fields on: materials for hydrogen storage; structure and properties of materials of metallurgical interest; mechanical and heat treatments of metals and alloys; surface treatments by means of ion-beams and pulsed-laser irradiation; magnetic and structural properties of amorphous metallic films and of metal/metal interfaces; disordered structures obtained by the sol-gel method and high energy ball milling.

Author and co-author of more than 135 publications on international journals with referee, 8 reviews or chapters of monographs, 10 invited lectures at international scientific meetings, about 80 scientific communications at national and international scientific meetings.

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Responsabile scientifico di progetti MURST-MIUR (PRIN 1998, PRIN 2001, PRIN 20004), UE (SCI-0024 e INTAS 95-1358), MAE (Italia-Romania, Italia-India, Italia-Russia, Italia-Ungheria, Italia-Argentina), CRUI (Galileo, Vigoni-DAAD) e vari contratti e contributi CRN.

Campi di ricerca su: materiali per stoccaggio di idrogeno, struttura e proprietà di materiali di interesse metallurgico; trattamenti meccanici e termici di metalli e leghe; trattamenti superficiali per mezzo di fasci ionici e irraggiamento laser pulsato; proprietà magnetiche e strutturali di film metallici amorfi e di interfacce metallo/metallo; strutture disordinate ottenute con metodo sol-gel e con macinazione ad alta energia.

Autore e co-autore di più di 135 pubblicazioni su riviste internazionali con referee, 8 rassegne o capitoli di monografie, 10 inviti a congressi internazionali, circa 80 comunicazioni scientifiche a congressi nazionali e internazionali.

### **List of recent publications** (limited to those appeared in scientific journals or monographs)

#### **2007**

- P. Gupta, A. Gupta, **G. Principi**, A. Maddalena, S. Bernstorff, H. Amenitsch: *Effect of annealing current density on the microstructure of nanocrystalline FeCuNbSiB alloy*. J. Appl. Phys. **101** (2007) 053907-1-053907-5, doi:[10.1063/1.2450676](https://doi.org/10.1063/1.2450676).
- B. Coluzzi, A. Biscarini, G. Mazzolai, F.M. Mazzolai, A. Tuissi, F. Agresti, S. Lo Russo, A. Maddalena, P. Palade, **G. Principi**: *Physical properties of hydrogen in TiVMnCr bcc alloys as deduced from hydrogen absorption/desorption and mechanical spectroscopy experiments*, J. Alloys Comp. (corrected proofs), doi:[10.1016/j.jallcom.2007.02.021](https://doi.org/10.1016/j.jallcom.2007.02.021).

- O. Palumbo, A. Paolone, R. Cantelli, C. Giannini, A. Gagliardi, P. Reale, B. Scrosati, S. Lo Russo, A. Maddalena, P. Palade, G. Principi, G. Schinteie, *An anelastic spectroscopy, differential scanning calorimetry and X-ray diffraction study of the crystallization process of Mg-Ni-Fe alloys*, J. Alloys Compd. (accepted manuscript).
- R. Gupta, F. Agresti, S. Lo Russo, A. Maddalena, P. Palade and G. Principi, *Structure and hydrogen storage properties of MgH<sub>2</sub> catalysed with La<sub>2</sub>O<sub>3</sub>*, J. Alloys Compd. (corrected proofs), doi:10.1016/j.jallcom.2006.10.10.
- L. Biasetto, A. Francio, P. Palade, G. Principi, P. Colombo, *Polymer-derived microcellular SiOC foams with magnetic functionality*, J. Mater. Sci. (accepted manuscript).

#### 2006

- A. Maddalena, M. Petris, P. Palade, S. Sartori, **G. Principi**, E. Settimo, B. Molinas, S. Lo Russo: *Study of Mg-based materials to be used in a functional solid state hydrogen reservoir for vehicular applications*, Int. J. Hydrogen Energy 31 (2006) 2097-2103.
- **G. Principi**, P. Palade, S. Sartori, A. Maddalena, F. Agresti, S. Lo Russo, B. Molinas, H. A. Peretti: *Investigations on light metal hydrides*, Proc. Advanced Materials for Energy Conversion III: A Symposium in Honor of Drs. Gary Sandrock, Louis Schlapbach, and Seijirau Suda, TMS (The Minerals, Metals & Materials Society) Annual Meeting, San Antonio, TX, March 12-16 (2006).
- F. Gauzzi, R. Montanari, **G. Principi**, M.E. Tata: *AlSi 304 steel: anomalous evolution of martensitic phase following heat treatments at 400 °C*, Mater. Sci. Eng. A 438-440 (2006) 202-206.
- P. Palade, **G. Principi**, S. Sartori, A. Maddalena, S. Lo Russo: *Mössbauer study of Mg-Ni(Fe) alloys processed as materials for solid state hydrogen storage*, Hyperfine Interactions (2006) 168:1029-1035, DOI 10.1007/s10751-006-9389-z.
- V.V. Tcherdynstev, L.Yu. Pustov, S.D. Kaloshkin, E.V. Shelenkov, **G. Principi**: *Phase coexistence in mechanically alloyed iron-manganese powders*, Hyperfine Interactions (2006) 168:937-942, DOI 10.1007/s10751-006-9389-x.
- P. Palade, S. Sartori, A. Maddalena, **G. Principi**, S. Lo Russo, M. Lazarescu, G. Shinteie, V. Kuncser, G. Filoti: *Hydrogen storage in Mg-Ni-Fe compounds prepared by melt spinning and ball milling*, J. Alloys Comp. 415 (2006) 170-176.

#### 2005

- V.V. Tcherdynstev, S.D. Kaloshkin, E.V. Shelekhov, A.I. Salimon, S. Sartori, **G. Principi**: *Quasicrystalline phase formation in the mechanically alloyed Al-Cu-Fe system*, Intermetallics 13 (2005) 841-847.
- T. Spataru, P. Blaha, K. Schwarz, V. Kuncser, P. Palade, S. Lo Russo, S. Dal Toé, V.A. Yartys, **G. Principi**: *The nature of the hydrogen bond in the LaNiSnH<sub>2</sub> and NdNiSnH hydrides*, J. Chem. Phys. 122 (2005) 124703-1/7.
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- P. Palade, **G. Principi**, T. Spataru, P. Blaja, K. Schwarz, V. Kuncser, S. Lo Russo, S. Dal Toé, V.A. Yartys: *Mössbauer study of LaNiSn and NdNiSn compounds and their deuterides*, J. Radioanal. Nucl. Chem. 266 (2005) 553-556.

#### 2004

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- **G. Principi**, A. Maddalena, M. Meyer, S. Dal Toé, A. Gupta, P. Sharma, B.A. Dasannacharya, N. Paul, S. Bernstorff, H. Amenitsch: *Structural evolution of the amorphous grain boundary phase during nanocrystallisation of Fe<sub>72</sub>Cu<sub>1</sub>Nb<sub>4.5</sub>Si<sub>13.5</sub>B<sub>9</sub>*, J. Magn. Magn. Mater. 272-276 (2004) 1441.
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#### 2003

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