Danilo Dini-Curriculum Vitae

Danilo Dini (D.D.) si è laureato in Chimica all'Università di Roma "La Sapienza" nel 1994 sotto la tutorship del Prof. Franco Decker con il massimo dei voti presentando una tesi sull'elettrocromismo di ossidi metallici. Tale studio riportava l'analisi delle proprietà ottiche, meccaniche, elettrochimiche e spettrali dell'ossido di tungsteno (VI) nella configurazione di film sottile. Per questo lavoro di tesi D.D. ha ottenuto nel 1994 il Premio "Luigi Grifone" della Societa' Chimica Italiana come miglior tesi italiana in Elettrochimica dell'anno ed ha pubblicato i relativi lavori:

The electrochromic response of tungsten bronzes M_xWO_3 with different ions and insertion rates
E. Masetti, D. Dini, F. Decker,
Solar Energy Mater. 39, 301-307 (1995)

A comparison of the electrochromic properties of WO_3 films intercalated with H^+, Li^+ and Na^+
D. Dini, F. Decker, E. Masetti
J. Appl. Electrochem. 26, 647-653 (1996)

Stress in thin films of metal oxide electrodes for intercalation reactions
D. Dini, F. Decker
Electrochim. Acta 43, 2919-2923 (1998)

Stress changes in electrochromic thin films : laser beam deflection method (LBDM) as a tool for the analysis of intercalation processes
D. Dini*, S. Passerini, B. Scrosati, F. Decker
Solar Energy Mater.Solar Cells56,213- 221(1999)

Ha conseguito nel 1998 il dottorato in Scienza dei Materiali nella stessa università con una tesi sulla deposizione e la modulazione elettrochimica delle proprietà spettrali, elettroniche e fotoelettrochimiche di politiofeni derivati da monomeri tertiofenici regioregolari pubblicando la seguente serie di lavori:

D. Dini*, F. Decker, F. Andreani, E. Salatelli, P. Hapiot
A comparative study of isomeric polyalkylterthiophenes with regular regiochemistry of substitution: Electrochemical synthesis
Polymer 41, 6473-6480 (2000)

D. Dini, F. Decker, G. Zotti, G. Schiavon, S. Zecchin, F. Andreani, E. Salatelli
A comparative study of isomeric polyalkylterthiophenes with regular regiochemistry of substitution : Characterization of electrochemical doping process
Chem. Mater. 11, 3484-3489 (1999)

L. Micaroni, D. Dini, F. Decker, M.A. De Paoli
Electrosynthesis and characterization of poly(3-methylthiophene) on different substrates
J. Solid State Electrochem. 3, 352-356 (1999)

A. Tarola, D. Dini , E. Salatelli, F. Andreani, F. Decker
Electrochemical Impedance Spectroscopy of Polyalkylterthiophenes
Electrochim. Acta 44, 4189-4193 (1999)

D. Dini*, F. Decker, G. Zotti
Study of polyalkylterthiophenes deposition processes
Synth. Met. 101, 22 (1999)

D. Dini*, F. Decker, G. Zotti, G. Schiavon , S. Zecchin, F. Andreani, E. Salatelli, M. Lanzi
EQCM Characterization of some substituted Polyterthiophenes
Electrochim. Acta 44, 1911-1917 (1999)

D. Dini, F. Decker, G. Zotti
Electrochemical growth of polyalkylthiophenes : *in-situ* characterization of deposition processes
Electrochem. Sol. St. Lett. 1, 217-219 (1998)

L. Micaroni , D. Dini , F. Decker, M.A. De Paoli
Photoelectrochemical response and photoconductivity of poly(3-methylthiophene)
Electrochim. Acta 44, 753-761 (1998)

M. Tsionsky, A.J. Bard, D. Dini, F. Decker
Polymer Films on Electrodes.28 Scanning Electrochemical Microscopy Study of Electron Transfer at Polyalkylterthiophenes Films
Chem. Mater. 10, 2120-2126 (1998)

Durante lo svolgimento della tesi di dottorato D.D. è stato visitatore presso il laboratorio di Elettrochimica del Prof. Allen J. Bard (Dipartimento di Chimica dell'Universita' del Texas ad Austin, USA), per l'utilizzo del microscopio a scansione elettrochimica nello studio dell'attività elettrocatalitica di polimeri coniugati.

D.D. ha svolto un postdottorato all' Istituto di Chimica Fisica del Fritz-Haber-Institut der Max-Planck-Gesellschaft (Berlino, Germania) sotto la direzione del Prof. Gerhard Ertl (Premio Nobel per la Chimica nel 2008) sulla formazione di patterns e sull' elettrochemiluminescenza di polimeri conduttori. Su quest'ultimo tema D.D. ha pubblicato la serie di lavori:

D. Dini*, K.Doblhofer, G.Ertl
Nucleation of electrolyte convection channels as the first step in electrohydrodynamic pattern formation
Phys. Chem. Chem. Phys. 2, 1183-1186 (2000)

U.Janakiraman, D.Dini, A.Preusser, A.B.Holmes, R.E.Martin, K.Doblhofer
Electrochemiluminescence of Conjugated Polymer
Synth. Met. 121, 1685-1686 (2001)

D. Dini*, R.E. Martin, A.B. Holmes
Anodic and cathodic Electrogenerated Chemiluminescence in Conjugated Polymers
Adv. Funct. Mater. 12, 299-306 (2002)

D. Dini*
Electrochemiluminescence from Organic Emitters
Chem. Mater. 17, 1933-1945 (2005)

Successivamente D.D. ha svolto un postdottorato presso l' Istituto di Chimica Organica dell'Università di Tubinga (Germania) nel gruppo del Prof. Michael Hanack sulla sintesi e caratterizzazione di ftalocianine per elettrocromismo ed applicazioni di ottica non lineare mirando all'ottenimento di relazioni univoche fra struttura del complesso macrociclico e proprietà di assorbimento ottico allo stato eccitato. I lavori pubblicati da D.D. sul tema delle applicazioni ottiche delle ftalocianine e derivati sono elencati qui di seguito:

Calvete, M.J.F.; D. Dini*
Conjugated macrocyclic materials with photoactivated optical absorption for the control of energy transmission delivered by pulsed radiations
J. Photochem. Photobio. C, 35, 56-73 (2018)

D. Dini*, Calvete M.J.F., Hanack M.
Nonlinear optical materials for the smart filtering of the optical radiation
Chem. Rev., 116, 13043-13233 (2016)

Santos C.I.M., Barata J.F.B., Calvete M.J.F., Vale L.S.H.P., D. Dini*, Meneghetti M., Neves M.G.P.M.S., Faustino M.A.F., Tomé A.C., Cavaleiro J.A.S.
Synthesis and functionalization of corroles. An insight on their nonlinear optical absorption properties
Current Organic Synthesis 11, 29-41(2014)

D. Dini*, Moreno Meneghetti, Mario J.F. Calvete, Thomas Arndt, Colin Liddiard, Michael Hanack
Tetrabrominated lead naphthalocyanine for optical power limiting
Chem. Eur. J. 16, 1212-1220 (2010)

Eliana F.A. Carvalho, Mario J.F. Calvete, José A.S. Cavaleiro, D. Dini*, Moreno Meneghetti, Augusto C. Tomé
Synthesis and high ranked NLT properties of new sulfonamide-substituted indium phthalocyanines
Inorg. Chim. Acta 363, 3945-3950 (2010)

Stefano Scuppa, Laura Orian, Danilo Dini, Saverio Santi, Moreno Meneghetti
Nonlinear Absorption Properties and Excited State Dynamics of Ferrocene
J. Phys. Chem. A 113, 9286-9294 (2009)

Vincenzo Amendola, Danilo Dini, Stefano Polizzi, Jing Shen, Karl M. Kadish, Mario J.F. Calvete, Michael Hanack, Moreno Meneghetti
Self-Healing of Gold Nanoparticles in the Presence of Zinc Phthalocyanines and Their Very Efficient Nonlinear Absorption Performances
J. Phys. Chem. C 113, 8688-8695 (2009)

Yunjing Li, Danilo Dini, Mario J.F.Calvete, Michael Hanack, Wenfang Sun
Photophysics and nonlinear optical properties of tetra- and octa-brominated silicon naphthalocyanines
J. Phys. Chem. A 112, 472-480 (2008)

Danilo Dini, Mario J.F. Calvete, Michael Hanack, Vincenzo Amendola, Moreno Meneghetti
Large two photon absorption cross sections of hemiporphyrazines in the excited state: A study of the multiphoton absorption process of hemiporphyrazines with different central metals
J. Am. Chem. Soc. 130, 12290-12298 (2008)

D. Dini*, Mario J.F. Calvete, Michael Hanack, Moreno Meneghetti
Indium phthalocyanines with different axial ligands: A study of the influence of the structure on the photophysics and optical limiting properties
J. Phys. Chem. A 112, 8515-8522 (2008)

Maria Pia Donzello, Elisa Viola, Costanza Bergami, Danilo Dini, Claudio Ercolani, Mauro Giustini, Karl M. Kadish, Moreno Meneghetti, Fabrizio Monacelli, Angela Rosa, Giampaolo Ricciardi
Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 6. Chemical Behavior, Redox Properties, and Highly Effective Photosensitizing Activity for Singlet Oxygen Production of Penta- and Monopalladated Complexes in Dimethylformamide Solution
Inorg. Chem. 47, 8757-8766 (2008)

Wenfang Sun, Gang Wang, Yunjing Li, Mario J.F. Calvete, Danilo Dini, Michael Hanack
Axial halogen ligand effect on photophysics and optical power limiting of some indium naphthalocyanines
J. Phys. Chem. A 111, 3263-3270 (2007)

Maria Cristina Larciprete, Danilo Dini, Raffaella Ostuni, Concita Sibilia, Mario Bertolotti, Xavier Alvarez-Mico, Rafael Gomez-Bombarelli, Mirko Cappeddu, Michael Scalora, Mark J. Bloemer
Optical switching of a photochromic bis-phenylazo compound in PMMA films
J. Mater. Sci. 42, 7866-7871 (2007)

Danilo Dini, Mario Calvete, Sergej Vagin, Michael Hanack
Design and synthesis of new-pyrrole based complexes for the evaluation of their nonlinear optical properties
J. Porphyrins Phthalocyanines 10, 261 (2006)

Danilo Dini, Mario J.F. Calvete, Michael Hanack, Vincenzo Amendola, Moreno Meneghetti
Demonstration of the optical limiting effect for an hemiporphyrazine
Chem. Commun. 2394-2396 (2006)

D. Dini*, Mario J.F. Calvete, Michael Hanack, Richard G.S. Pong, Steven R. Flom, James S. Shirk
Nonlinear transmission of a tetrabrominated naphthalocyaninato indium chloride
J. Phys. Chem. B 110, 12230-12239 (2006)

Yu Chen, Michael Hanack, Werner J. Blau, Danilo Dini, Ying Liu, Ying Lin, Jinrui Bai
Soluble axially substituted phthalocyanines: synthesis and nonlinear optical response
J. Mater. Sci. 41, 2169-2185 (2006)

Yu Chen, Yasuyuki Araki, Danilo Dini, Ying Liu, Osamu Ito, Mamoru Fujitsuka
The steady-state and time-resolved photophysical properties of a dimeric indium phthalocyanine complex.
Mater. Chem. Phys. 98, 212-216 (2006)

Wenfang Sun, Gang Wang, Danilo Dini, Michael Hanack
Photophysics and optical limiting of octaphenoxysubstituted indium naphthalocyanines with halogen axial ligand
J. Porphyrins Phthalocyanines 10, 509 (2006)

H. Peisert, I. Biswas, L. Zhang, M. Knupfer, M. Hanack, D. Dini, D. Batchelor, T. Chassé
Molecular orientation of substituted phthalocyanines: Influence of the substrate roughness
Surf. Sci. 600, 4024-4029 (2006)

D. Dini*, Mario Calvete, Sergej Vagin, Michael Hanack, Anders Eriksson, Cesar Lopes
Analysis of the nonlinear transmission properties of some naphthalocyanines
J. Porphyrins Phthalocyanines 10, 1165-1171 (2006)

Danilo Dini, Mario J.F. Calvete, Michael Hanack, Weizhe Chen, Wei Ji
Synthesis of axially substituted gallium, indium and thallium phthalocyanines with nonlinear optical properties
ARKIVOC 3, 77-96 (2006)

D. Dini*, Sergej Vagin, Michael Hanack, Vincenzo Amendola, Moreno Meneghetti
Nonlinear optical effects related to saturable and reverse saturable absorption by subphthalocyanines at 532 nm
Chem. Commun. 3796-3798 (2005)

Mario J.F. Calvete, Danilo Dini, Michael Hanack, Juan Carlos Sancho-Garcia, Weizhe Chen, Wei Ji
Synthesis, DFT calculations, linear and nonlinear optical properties of binuclear phthalocyanine gallium chloride
J. Mol. Modeling 12, 543-550 (2006)

Mario J.F. Calvete, Danilo Dini, Steven R. Flom, Michael Hanack, Richard G.S. Pong, James S. Shirk
Synthesis of a bisphthalocyanine and its nonlinear optical properties
Eur. J. Org. Chem. 3499-3509 (2005)

A. Haug, S. Harbeck, D.Dini, M. Hanack, M.J. Cook, H. Peisert, T. Chassé
Alkyl chain effects in thin films of substituted phthalocyanines studied using infrared spectroscopy
Appl. Surf. Sci. 252, 139-142 (2005)

Danilo Dini, Michael Hanack, Moreno Meneghetti
Nonlinear optical properties of tetrapyrazinoporphyrazinato indium chloride complex due to excited state absorption
J. Phys. Chem. B 109, 12691-12696 (2005)

Danilo Dini, Michael Hanack, Hans-Joachim Egelhaaf, Juan Carlos Sancho-García, Jerome Cornil
Synthesis of axially substituted tetrapyrazinoporphyrazinato metal complexes for optical limiting and study of their photophysical properties
J. Phys. Chem. B 109, 5425-5432 (2005)

S. Dick, H. Peisert, D. Dini, M. Hanack, M. J. Cook, I. Chambrier, T. Chassé
Influence of the alkyl-chains length on the electronic structure and interface properties of 1,4-octasubstituted Zinc Phthalocyanines thin films on gold
J. Appl. Phys. 97, 073715/1-8 (2005)

I. Biswas, L. Zhang, M. Knupfer, M. Hanack, D. Dini, M.J. Cook, I. Chambrier, T. Schmidt, D. Batchelor, T. Chassé
Orientation of substituted phthalocyanines on polycrystalline gold: distinguishing between the first layers and thin films
Chem. Phys. Lett. 403, 1-6 (2005)

Guo Ying Yang, Michael Hanack, Yiew Wang Lee, Danilo Dini, Jing Fang Pang
Fluorinated naphthalocyanines displaying simultaneous revers saturable absorption at 532 and 1064 nm
Adv. Mater. 17, 875-879 (2005)

Indro Biswas, Heiko Peisert, T. Schwieger, Danilo Dini, Michael Hanack, M. Knupfer, T. Schmidt, Thomas Chassé
Tetra-*t*-butyl magnesium phthtalocyanine on gold: Electronic structure and molecular orientation
J. Chem. Phys. 122, 064710/1-8 (2005)

Helmut Bertagnolli, Werner J. Blau,Yu Chen, Danilo Dini, Martin P. Feth, Sean M. O'Flaherty, Michael Hanack, Venkata Krishnan
Synthesis, characterization and optical limiting properties of a gallium phthalocyanine dimer
J. Mater. Chem. 15, 683-689 (2005)

Maria Pia Donzello,Zoungping Ou,Danilo Dini,Moreno Meneghetti, Claudio Ercolani, Karl M. Kadish
Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. Part II. Metal Complexes of Tetrakis-2,3-[5,6-di(2-piridyl)pyrazino]porphyrazine: Linear and Nonlinear Optical Properties and Electrochemical Behavior
Inorg. Chem. 43, 8637-8648 (2004)

D. Dini*, Mario Calvete, Sergej Vagin, Michael Hanack, Guo Ying Yang, Ji Wei, Chen Weizhe, Kenneth McEwan
Nonlinear Optical Absorption in Tetrapyrrolic Macrocycles
J. Porphyrins Phthalocyanines 8, 524 (2004)

Yu Chen, Danilo Dini, Michael Hanack, Mamoru Fujitsuka, Osamu Ito
Excited state properties of monomeric and dimeric axially bridged indium phthalocyanines upon UV-Vis laser irradiation
Chem. Commun. 340-341 (2004)

D. Dini*, Michael Hanack
Phthalocyanines and related compounds as materials for advanced technologies: Some examples
J. Porphyrins Phthalocyanines 8, 915-933 (2004)

Maria Pia Donzello, Danilo Dini, Giuseppe D'Arcangelo, Claudio Ercolani, Karl M. Kadish, Zhongping Ou, Pavel A. Stuzhin, Riqiang Zhan
Porphyrazines with Annulated Diazepine Rings. 2: An Alternative Synthetic Route to Tetrakis-2,3-(5,7-diphenyl-6*H*-1,4-diazepino) porphyrazines. New Metal Complexes, General Physicochemical Data, UV-Vis Linear and Optical Limiting Behavior, Electrochemical and Spectroelectrochemical Properties
J. Am. Chem. Soc. 125, 14190-14204 (2003)

Danilo Dini, Guo Ying Yang, Michael Hanack
Perfluorinated phthalocyanines for optical limiting : Evidence for the direct correlation between substituent electron withdrawing character and the nonlinear optical effect
J. Chem. Phys. 119, 4857-4864 (2003)

D. Dini*, Markus Barthel, Thorsten Schneider, Martin Ottmar, Sanjiv Verma, Michael Hanack
Phthalocyanines and Related Compounds as Switchable Materials upon Strong Irradiation: The Molecular Engineering behind the Optical Limiting Effect
Solid State Ionics 165, 289-303 (2003)

D. Dini*
Conjugated Molecules for the Smart Filtering of Intense Radiations
Int. J. Mol. Sci. 4, 291-300 (2003)

Guo Ying Yang, Michael Hanack, Yiew Wang Lee, Yu Chen, May Ka Yuen Lee, Danilo Dini
Synthesis and nonlinear optical properties of fluorine containing naphthalocyanines
Chem. Eur. J. 9, 2758-2762 (2003)

Sergej Vagin, Danilo Dini, Michael Hanack
Synthesis and Characterization of New Octaaryltetraazaporphyrinato Indium(III) Complexes for Optical Limiting
Inorg. Chem. 42, 2683-2694 (2003)

Yu Chen, L.R. Subramanian, Mamoru Fujitsuka, Osamu Ito, Sean O'Flaherty, Werner J. Blau, Thorsten Schneider, Danilo Dini, Michael Hanack
Synthesis and Optical Limiting Properties of Axially Bridged Phthalocyanines: [(*t* -Bu_4PcGa)$_2$O] and [(*t*-Bu_4PcIn)$_2$O]
Chem. Eur. J. 8, 4248-4254 (2002)

Markus Barthel, Danilo Dini, Sergej Vagin, Michael Hanack
An Easy Route of New Axially Substituted Titanium (IV) Phthalocyanines
Eur. J. Org. Chem. 3756-3762 (2002)

Michael Hanack, Danilo Dini, Markus Barthel, Sergej Vagin
Conjugated Macrocycles as Active Materials in Nonlinear Optical Processes: Optical Limiting Effect with Phthalocyanines and Related Compounds
Chem. Record 2, 129-148 (2002)

D.D. ha poi ottenuto una borsa di studio sia presso il laboratorio del Dr. James Shirk (Naval Research Laboratories, Washington, USA) che al Dipartimento di Scienze Chimiche dell'Università di Padova lavorando nel gruppo del Prof. Moreno Meneghetti per l'utilizzo di laser pulsati nello studio delle proprietà di stato eccitato e la polarizzabilità elettronica non lineare dei macrocicli coniugati in continuità e coerenza con quanto svolto da D.D. nel periodo di lavoro a Tubinga.
Prima dell' ingresso come ricercatore a tempo indeterminato presso il Dipartimento di Chimica dell'Università di Roma "La Sapienza" (2011), D.D. ha svolto attività di ricerca presso la School of Chemical Sciences della Dublin City University (DCU, Dublino, Irlanda) nel gruppo del Prof. Han Vos per lo studio di fattibilità di semiconduttori inorganici e coloranti per celle fotovoltaiche e celle solari di tipo Graetzel con le finalità di applicare materiali (sia molecolari che di tipo inorganico) e dispositivi in fotocatalisi, foto-elettrocatalisi e fotoconversione per generazione di energia elettrica. In questi ultimi campi D.D. ha pubblicato i lavori:

Yvonne Halpin, Laura Cleary, Lynda Cassidy, Sabine Horne, Danilo Dini,Wesley R. Browne, Johannes G. Vos
Spectroelectrochemical properties of homo- and heteroleptic ruthenium and osmium binuclear complexes:intercomponent
communication as a function of energy differences between HOMO levels of bridge and metal centres
Dalton Trans. 4146-4153 (2009)

Muhammad Awais, Mahfujur Rahman, Don MacElroy, Nadia Coburn, Danilo Dini, Johannes G. Vos, Denis P. Dowling
Deposition and characterization of NiO_x coatings by magnetron sputtering for application in dye-sensitized solar cells
Surf. Coat. Techn. 204, 2729-2736 (2010)

Yvonne Halpin, Danilo Dini, Hamid M. Younis Ahmed, Lynda Cassidy,Wesley R. Browne, Johannes G. Vos
Excited state localization and internuclear interactions in asymmetric Ruthenium (II) and Osmium (II) bpy/trpy based dinuclear compounds
Inorg. Chem. 49, 2799-2807 (2010)

Gibson E.A., Awais M., Dini D., Dowling D.P., Pryce M.T., Vos J.G., Boschloo G., Hagfeldt A.
Dye sensitised solar cells with nickel oxide photocathodes prepared via scalable microwave sintering
Phys. Chem. Chem. Phys. 15, 2411-2420 (2013)

Awais M., D. Dini*, McElroy J.M.D., Halpin Y., Vos J.G., Dowling D.P.
Electrochemical characterization of NiO electrodes deposited via a scalable powder microblasting technique
J. Electroanal. Chem. 689, 185-192 (2013)

Halpin Y., Pryce M.T., Rau S., Dini D., Vos J.G.
Recent progress in the development of dinuclear photocatalysts for hydrogen generation
Dalton Trans. 42, 16243-16254 (2013)

Soman S., Singh Bindra G., Paul A., Groarke R., Manton J.C., Connaughton F.M., Schulz M., Dini D., Long C., Pryce M., Vos J.G.
Wavelength dependent photocatalytic H_2 generation using iridium-Pt/Pd complexes
Dalton Trans. 41, 12678-12680 (2012)

Muhammad Awais, Mahfujur Rahman, J.M. Don MacElroy, DaniloDini, Johannes G. Vos , Denis P. Dowling
Application of a novel microwave plasma treatment for the sintering of nickel oxide coatings for use in dye-sensitized solar cells
Surf. Coat. Techn. 205, S245-S249 (2011)

Ahmed H.M.Y., Coburn N., Dini D., De Jong J.J.D., Villani C., Browne W.R., Vos J.G.
Application of circular dichroism spectroscopy in the study of mixed-valence asymmetric ruthenium polypyridyl complexes
Inorg. Chem. 50, 5861-5863 (2011)

In seguito alla chiamata a Roma all'interno del Dip. di Chimica, D.D. si è occupato della ricerca sul tema delle celle solari fotoelettrochimiche di tipo p con particolare attenzione allo studio dei materiali elettrodici e sensibilizzatori. Più recentemente D.D. ha avviato lo studio delle celle solari a perovskite con architettura invertita utilizzando ossidi di metalli di transizione con proprietà semiconduttrici di tipo p. D.D. ha pubblicato i lavori seguenti avvalendosi della collaborazione dei gruppi di ricerca della Prof.ssa Claudia Barolo (Università di Torino), Prof. Aldo Di Carlo (Università di Roma, "Tor Vergata"), Prof. Ruggero Caminiti e Robertino Zanoni (Università di Roma, "La Sapienza"), Dr. Antonio Abate (Helmholtz Zentrum, Berlino, Germania), Prof. Anders Hagfeldt (EPFL, Losanna, Svizzera), Prof.ssa Elizabeth Gibson (University of Newcastle), Prof. Fabrice Odobel (Università di Nantes, Francia) e il Prof. Denis Dowling (University College Dublin, Dublino, Irlanda):

Di Girolamo, D.; Piccinni, M.; Matteocci, F.; Marrani, A.G.; Zanoni, R.; D. Dini*
Investigating the Electrodeposition Mechanism of Anodically Grown NiOOH Films on Transparent Conductive Oxides
Electrochimica Acta, 319, 175-184 (2019)

Di Girolamo, D.; Matteocci, F.; Kosasih, F.U.; Chistiakova, G.; Zuo, W.; Korte, L.; Divitini, G.; Korte, L.; Ducati, C.; Di Carlo, A.; Dini, D.; Abate, A.
Stability and dark hysteresis correlate in NiO-based perovskite solar cell
Adv. Energy Mater., 1901642/1-10 (2019)

Di Girolamo, D.; Phung, N.; Jošt, M.; Al-Ashouri, A.; Chistiakova,G.; Li, J.; Márquez, J.A.; Unold, T.; Korte, L.; Albrecht, S.; Di Carlo, A.; D. Dini*; Abate, A.
From Bulk to Surface: Sodium Treatment Reduces Recombination at the Nickel Oxide/Perovskite Interface
Adv. Mater. Interfaces, 1900789/1-11 (2019)

Bonomo, M.; Mariani, P.; Mura, F.; Di Carlo, A.; D. Dini*
Nanocomposites of nickel oxide and zirconia for the preparation of photocathodes with improved performance in p-type dye-sensitized solar cells
J. Electrochem. Soc., 166, D290-D300 (2019)

Di Girolamo, D.; Ibrahim-Dar, M.; Dini, D.; Gontrani, L.; Caminiti, R.; Mattoni, A.; Grätzel, M.; Meloni, S.
Dual effect of humidity on cesium lead bromide: enhancement and degradation of perovskite film
J. Mater. Chem. A, 7, 12292-12302 (2019)

Bonomo, M.; Barbero, N.; Naponiello, G.; Giordano, M.; Dini, D.; Barolo, C.
Sodium Hydroxide pretreatment as an effective approach to reduce the dye/holes recombination reaction in p-type DSCs
Frontiers in Chemistry, 7, 99/1- 9 (2019)

Marrani, A.G.; Bonomo, M.; D. Dini*
Adsorption dynamics of redox active species onto polarized surfaces of sensitized NiO
ACS Omega, 4, 1690-1699 (2019)

D. Dini*, Bonomo, M.; Decker, F.
Electrochemical and photoelectrochemical properties of nickel oxide (NiO) with nanostructured morphology for photoconversion applications
Frontiers in Chemistry, 6, 601/1-16 (2018)

Bonomo, M.; Di Carlo , A.; D. Dini*
Study of the influence of the I-based electrolyte composition on the photoconversion properties of p-type dye-sensitized solar cells
J. Electrochem. Soc., 165, H889-H896 (2018)

Bonomo, M.; Gatti, D.; Barolo, C.; D. Dini*
Effect of sensitization on the electrochemical properties of nanostructured NiO
Coatings, 8, 232 (2018)

Bonomo, M.; Sheehan, S.; Dowling, D.P.; Gontrani, L.; D. Dini*
First Evidence of Electrode Reconstruction in Mesoporous NiO After Operation as Photocathode of Dye-Sensitized Solar Cells
ChemistrySelect, 3, 6729-6736 (2018)

Bonomo, M.; Di Carlo, A.; Centore, R.; Dini, D.; Carella, A.
New pyran-based dyes as efficient sensitizers of p-type dye-sensitized solar cells
Solar Energy, 169, 237-241 (2018)

Bonomo, M.; Naponiello, G.; Dini, D.
Oxidative dissolution of NiO in aqueous electrolyte: an impedance study
J. Electroanal. Chem., 816, 205-214 (2018)

Marrani, A.G.; Coico, A.C.; Giacco, D.; Zanoni, R.; Scaramuzzo, F.A.; Schrebler, R.; Dini, D.; Bonomo, M.; Dalchiele, E.A.
Integration of graphene onto silicon through electrochemical reduction of graphene oxide layers in non-aqueous medium
Appl. Surf. Sci., 445, 404-414 (2018)

Bonomo, M.; Magistris, C.; Buscaino, R.; Fin, A.; Barolo, C.; D. Dini*
Effect of sodium hydroxide pretreatment of NiO_x cathodes on the performance of squaraine-sensitized *p*-type dye-sensitized solar cells
ChemistrySelect, 3, 1066-1075 (2018)

Bonomo, M.; Saccone, D.; Magistris, C.; Barolo, C.; Cinà, L.; Di Carlo, A.; D. Dini*
Influence of the conditions of sensitization on the characteristics of *p*-DSCs sensitized with asymmetric squaraines
J. Electrochem. Soc., 164, H1099-H1111 (2017)

Bonomo M., Carella A., Centore R., Di Carlo A., Dini D.
First examples of pyran based colorants as sensitizing agents of *p*-type dye-sensitized solar cells
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Ameline D., Diring S., Farre Y., Pellegrin Y., Naponiello G., Blart E., Charrier B., Dini D., Jacquemin D., Odobel F.
Isoindigo Derivatives for Application in p-Type Dye Sensitized Solar Cells
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Awais M., Gibson E., Vos J.G., Dowling D.P., Hagfeldt A., D. Dini*
Fabrication of efficient NiO photocathodes prepared via RDS with novel routes of substrate processing for p-type dye-sensitized solar cells
ChemElectroChem 1, 384-391 (2014)

Marrani A., Novelli V., Sheehan S., Dowling D.P., Dini D.
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ACS Appl. Mater. Interf. 6, 143-152 (2014)

Venditti I., Barbero N., Russo M.V., Di Carlo A., Decker F., Fratoddi I., Barolo C., D. Dini*
Electrodeposited ZnO with squaraine sentisizers as photoactive anode of DSCs
Mater. Res. Express 1, 015040/1-18 (2014)

Pumiglia D., Giustini M., Dini D., Decker F., Lanuti A., Mastroianni S., Veyre S., Caprioli F.
Photoelectrochemical response of DSSCs under prolonged reverse bias and conduction band lowering in Ru-complex sensitized TiO_2
ChemElectroChem 1, 1388-1394 (2014)

Giustini M., Angelone D., Parente M., Dini D., Decker F., Lanuti A., Reale A., Brown T., Di Carlo A.
Emission spectra and transient photovoltage in dye-sensitized solar cells under stress tests
J. Appl. Electrochem. 43, 209-215 (2013)

Complessivamente D.D. ha pubblicato 136 lavori su riviste scientifiche internazionali revisionate alla pari riportando a Ottobre 2019 un indice di Hirsch pari a 35 (dati Web of Science e Scopus) e a 30 senza autocitazioni (dati Scopus). D.D. ha partecipato a più di 30 congressi internazionali.

Danilo Dini - Schematic CV

Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	1994	Dept. Chemistry, University of	Full marks (110 cum laude)

		Rome “LA SAPIENZA”	
PhD	1998	University of Rome “LA SAPIENZA”	PhD in Materials Science
Habilitation à Diriger des Recherches	2002	Université Grenoble 1 “Joseph Fourier”	Habilitation Specialite Chimie

Appointments

Academic Appointments

Start	End	Institution	Position
1999	2000	Department of Physical Chemistry of Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin(Germany)	Postdoctoral fellow
2001	2006	Institute of Organic Chemistry, University of Tuebingen, Tuebingen (Germany)	Senior researcher
2007	2008	Dept. Chemical Sciences, University of Padua, Padua (Italy)	Researcher
2008	2011	School of Chemical Sciences, Dublin City University (DCU), Dublin, Ireland	Researcher
2011	2017	Dept. of Chemistry, University of Rome LA SAPIENZA	Assistant Professor
2018	-	Dept. of Chemistry, University of Rome LA SAPIENZA	Associate Professor

IIIB – Other Appointments

Start	End	Institution	Position
1994	1996	Laboratory of analysis of fuels for military aircrafts (Rete POL, Italian Air Force), Parma (Italy)	Chemist-Lieutenant

Teaching experience

Year	Institution	Lecture/Course
1992	Institute IPSIA (now IISST-L. Maitani) of Orvieto (Terni, Italy)/Technical High School	General Chemistry and Chemical Science of Commodities

2006	Institute of Physical and Theoretical Chemistry, University of Tübingen, Tübingen, Germany	Experimental Spectroscopy
2011/12	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Generale ed Inorganica per SciBio (9CFU)
2012/13	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Generale ed Inorganica per SciBio (9CFU)
2013/14	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Generale ed Inorganica per SciBio (9CFU)
2014/15	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Generale ed Inorganica per SciBio (9CFU)
2015/16	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Generale ed Inorganica per SciGeo (9CFU)
2016-	Dip. Chimica, Università di Roma "La Sapienza"	Elettrochimica per LM in Chimica (6CFU)
2017-	Dip. Chimica, Università di Roma "La Sapienza"	Chimica Fisica dello Stato Solido e Materiali Nanostrutturati per LM in Chimica Industriale (6CFU)
2017-	Dip. Chimica, Università di Roma "La Sapienza"	Esercitazioni di Laboratorio (corso: Chimica Fisica III) per LT in Chimica

Society memberberships, Awards and Honors

Year	Title
1994	"Premio Grifone" Award for best Italian Thesis of 1994 in the field of Electrochemistry (issued by Società Chimica Italiana)
	Membro della Società Chimica Italiana
	Membro dell' International Society of Electrochemistry (ISE)
2018	Membro del Collegio di Dottorato in MODELLI MATEMATICI PER L'INGEGNERIA, ELETTROMAGNETIOSMO E NANOSCIENZE
2019	Membro del Board Editoriale della rivista Nanomaterials (IF: 4.034; edita da MDPI)

Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2012	Nanoparticelle polimeriche e metalliche funzionalizzate: Sintesi, caratterizzazione e studi applicative	Ateneo 2011	2.8 kEuro

	in biotecnologia e fotovoltaico (I)		
2013	Sviluppo di celle solari tandem a colorante con catodi nanoporosi fotoattivi di nuova concezione (PI)	Ateneo 2012	4.6 kEuro
2013	Dynamics of excited states in a peripherally substituted titanyl hemiporphyrazine through time-resolved XAS of the different heteroatoms (PI)	Sincrotrone Trieste	Tempo macchina
2013	Dispositivi solari a coloranti di nuova generazione; sensibilizzatori e conduttori nano-ingegnerizzati (I)	PRIN 2010-2011	10 kEuro
2014	Celle solari a colorante multi-giunzione (DSC-MG) per la fotocatalisi di reazioni redox con ampliamento dello spettro di attivazione (I)	Ateneo 2013	2.5 kEuro
2015	Amino-acid anions in organic compounds: charting the boundary of room temperature ionic liquids (I)	Ateneo 2014	4 kEuro
2016	Characterising new generation ionic liquids by theory and experiments: the role of phosphate and bi-sulphide groups on proton transfer and conductivity (I)	Ateneo 2015	6.6 kEuro
2016	Sviluppo di strati buffer per celle a base di CZTS (PI)	PAR-ENEA- Ricerca su tecnologie fotovoltaiche- Ente erogante: MiSE	35 kEuro
2017	Sviluppo di strati buffer per celle a base di CZTS (PI)	PAR-ENEA- Ricerca su tecnologie fotovoltaiche- Ente erogante: MiSE	35 kEuro
2017	Definizione di biosensori elettrochimici di tipo amperometrico per la determinazione della provenienza degli oli di oliva (PI)	Ateneo 2016	13 kEuro
2018	Sviluppo di metodi di screening basati su elettrodi enzimatici modificati da liquidi ionici come biosensori amperometrici e analisi di dati di raggi X in fluorescenza e diffrazione rivolti alla classificazione ed al controllo della qualità degli oli di oliva (PI)	Ateneo 2017	12.5 kEuro
2018	Sviluppo di strati buffer per celle a base di CZTS (PI)	PAR-ENEA- Ricerca su tecnologie fotovoltaiche- Ente erogante: MiSE	11 kEuro
2018	Progetto di generico interesse nella tematica della Chimica Fisica (PI)	Società Chimica Italiana	23.9 kEuro
2019	Structural and chemical-physical characterization of new deep	Ateneo 2018	25 kEuro

	eutectic solvents (DESs) for advanced applications in electrochemistry (PI)		
2019	Novel multilayered electrode nano-architectures for electrocatalytic applications (fuel cells and electrolyzers)] prot. 2017YH9MRK (PI di unità)	PRIN 2017	153 kEuro

Research Activities

Keywords

- **Electrochemistry**
- **Electrochromism**
- **Conducting polymers**
- **Nonlinear optical spectroscopy**
- **Phthalocyanines**
- **Materials Science**
- **Semiconductors**
- **Solar energy conversion**
- **Electrocatalysis**
- **Molecular sensitizers**
- **Nanostructured materials**

Brief Description

The research activity of Danilo Dini involves the evaluation and design of materials for the development of optical/ electrochemical devices such as electrochromic windows, current/potential based sensors, displays, high-power sources, light emitting electrochemical cells, nonlinear optical filters, optical limiters, solar energy conversion electrochemical cells and fuel/energy generation from sunlight conversion. Moreover, Danilo Dini has undertaken the study of the electrochemistry of dye-sensitised semiconducting oxides with nano-features for the realization of photoelectrocatalytic devices based on the working principle of the Grätzel cell, which involve photoinduced reduction processes. More recently Danilo Dini has started a new program of research involving the utilization of ionic liquids for electrochemical applications ranging from sensing to solar conversion.

Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]-	**135**	**Scopus**	**1995**	**2019**

peer-reviewed				
Book chapters [scientific]	**7**		**1999**	**2015**

Total Impact factor (IF)	**460.926 (da Web of Science)**
Total Citations	**3482 (Scopus)**
Average Citations per Product	**25.79**
Hirsch (H) index	**35 (Scopus, WoS)**
Normalized H index*	**1.46 (Scopus)**

*H index divided by the academic seniority.

Roma, 21 Ottobre 2019