

II. PUBLICATIONS / Veröffentlichungen

1. Photoinduced Charge Carriers in a Donor-acceptor Double-cable Polythiophene with Covalently Bound Tetracyanoanthraquinodimethane Moieties

G. Zerza, A. Cravino, R. Gómez, J. L. Segura, M. Svensson, M. R. Andersson, N. Martín, H. Neugebauer, N. S. Sariciftci
MRS proceedings Vol 660 (2001) JJ8.11.1-6

2. The Interplay of Efficiency and Morphology in Photovoltaic Devices Based on Interpenetrating Networks of Conjugated Polymers with Fullerenes

D. Gebeyehu, C.J.Brabec, F. Padinger, T. Fromherz, J.C. Hummelen, D. Badt, H. Schindler, and N.S.Sariciftci
Synthetic Metals 118 (2001), 1-9

3. Multiple reduction states with different conductivities of polybenzimidazobenzophenanthroline (BBL) studied with infrared spectroelectrochemistry

Y. Teketel, H. Neugebauer, N.S. Sariciftci, S.Yi, A.A. Jenekhe
Synthetic Metals 116 (2001), 241-245

4. Vibrational Spectroscopy on pDTT3 - a Low Band Gap Polymer Based on Dithienothiophene

A. Cravino, H. Neugebauer, S. Luzzati, M. Catellani, N.S. Sariciftci
Journal of Physical Chemistry B 105 (2001), 46-52

5. Polarized Doping-induced Infrared Absorption in Highly Oriented Conjugated Polymers

E. Kirk Miller, Christoph J. Brabec, Helmut Neugebauer, Alan J. Heeger and N. Serdar Sariciftci
Chemical Physics Letters 335 (2001), 23-26

6. Photoexcited Spectroscopy and In Situ electrochemical Spectroscopy in Conjugated Polymers: A Comparative Study

H. Neugebauer, A. Cravino, Teketel Yohannes and N.S. Sariciftci
Synthetic Metals 116 (2001), 115-121

7. High oriented epitaxial oligomer/fullerene structures grown by hot wall epitaxy

A.Y. Andreev, G. Matt, H. Sitter, C.J. Brabec, D. Badt, H. Neugebauer, N.S. Sariciftci
Synthetic Metals 116 (2001), 235-239

8. Photoactive Blends of Poly(para-phenylenevinylene) (PPV) with Methanofullerenes from a Novel Precursor: Photophysics and Device Performance

C.J. Brabec, A. Cravino, G. Zerza, N.S. Sariciftci, R. Kiebooms, D. Vanderzande, J.C. Hummelen
Journal of Physical Chemistry B 105 (2001), 1528-1536

9. 2.5 % Efficient Organic Solar Cells

S.E. Shaheen, C.J. Brabec, N.S. Sariciftci, F. Padinger, T. Fromherz, J.C. Hummelen
Applied Physics Letters 78 (2001), 841-843

10. Plastic Solar Cells

C.J. Brabec, N.S. Sariciftci, J.C. Hummelen

Advanced Functional Materials Vol 11, No. 1 (2001), pp 15-26

11. Magnetic Resonance Studies on Conjugated Polymer Fullerene Mixtures

M. C. Scharber, N. A. Schultz, C. J. Brabec, N. S. Sariciftci

Synthetic Metals 121 (2001), 1567-1568

12. Er³⁺- Emission From Organic Complexes Embedded In Thin Polymer Films

M. Koppe, C. J. Brabec, N. S. Sariciftci, Y. Eichen, G. Nakhmanovich, E. Ehrenfreund, O. Epstein, W. Heiss

Synthetic Metals 121 (2001), 1511-1512

13. Low Band-Gap Polymeric Photovoltaic Devices

S. E. Shaheen, D. Vangeneugden, R. Kiebooms, D. Vanderzande, T. Fromherz, F. Padinger, C. J. Brabec, N. S. Sariciftci

Synthetic Metals 121 (2001), 1583-1584

14. Organic Photovoltaic Devices produced from Conjugated Polymer / Methanofullerene Bulk Heterojunctions

C. J. Brabec, S. E. Shaheen, T. Fromherz, F. Padinger, J. C. Hummelen, A. Dhanabalan, R. A. J. Janssen, N. S. Sariciftci

Synthetic Metals 121 (2001), 1517-1520

15. Recent Developments in Conjugated Polymer Based Plastic Solar Cells

C. J. Brabec, N. S. Sariciftci

Monatshefte f. Chemie, Chemical Monthly 132 (2001), 421-431

16. Infrared spectroelectrochemistry on conducting polymers and fullerenes

Carita Kvarnström, Helmut Neugebauer, Ari Ivaska

Advanced Functional Molecules and Polymers (4 Volumes), editet by H.S. Nalwa, Vol 2 (Processing and Spectroscopy), chapter 6 (2001) 139-170

17. Poly(2-hexyl-9,10-anthrylene vinylene) - A New Class of Soluble Poly(anthrylene vinylene)s

R. Müllner, A. Cravino, J. Williams, F. Stelzer, G. Jakopic, G. Leising

Synthetic Metals Vol 119 (2001) 193-194

18. Electropolymerization and Spectroscopic Properties of a Novel Double-Cable Polythiophene with Pendant Fullerenes for Photovoltaic Applications

A. Cravino, G. Zerza, H. Neugebauer, S. Bucella, M. Maggini, E. Menna, G. Scorrano, M. Svensson, M.R. Andersson, N.S. Sariciftci

Synthetic Metals 121 (2001), 1555-1556

19. Semiconductor/conjugated polymer/electrolyte interfaces studied with infrared photospectroelectrochemistry

H. Neugebauer, Teketel Yohannes, N.S. Sariciftci

Synthetic Metals Vol 119 (2001) 379-380

20. *In situ UV-VIS-NIR and Raman spectroelectrochemical studies of the Conjugated Ladder Polymer Polybenzimidazobenzophenanthroline (BBL)*

Teketel Yohannes, H. Neugebauer, S. Luzzati, M. Catellani, S. Yi, S.A. Jenekhe, N.S. Sariciftci
Synthetic Metals Vol 119 (2001) 319-320

21. *Solid State dye-sensitized TiO₂ solar cells with poly(3-octylthiophene) as hole transport layer*

D. Gebeyehu, C.J. Brabec, F. Padinger, T. Fromherz, S. Spiekermann, N. Vlachopoulos, F. Kienberger, H. Schindler, N.S. Sariciftci
Synthetic Metals 121 (2001), 1549-1550

22. *Degradation of Bulk Heterojunction Solar Cells Operated in an Inert Gas Atmosphere: A Systematic Study*

F. Padinger, T. Fromherz, P. Denk, C.J. Brabec, J. Zettner, T. Hierl, N.S. Sariciftci
Synthetic Metals 121 (2001), 1605-1606

23. *Ultrafast Charge Transfer in Conjugated Polymer-Fullerene Composites*

G. Zerza, C.J. Brabec, G. Cerullo, S. De Silvestri, N.S. Sariciftci
Synthetic Metals 119 (2001), 637-638

24. *Para-sexiphenyl/C₆₀ Bi- and Multilayers grown by Hot Wall Epitaxy*

G. Matt, A. Andreev, H. Sitter, C.J. Brabec, H. Neugebauer, P. Hinterdorfer, N.S. Sariciftci
Synthetic Metals 121 (2001), 1373-1374

25. *Self-assembled growth of highly oriented para- sexiphenyl thin films*

A. Andreev, H. Sitter, C.J. Brabec, P. Hinterdorfer, G. Springholz, N.S. Sariciftci
Synthetic Metals 121 (2001), 1379-1380

26. *Towards Controlled Donor-Acceptor Interactions in Non-composite Polymeric Materials: Synthesis and Characterization of a Novel Polythiophene Incorporating ?-*

Conjugated 1,3-Dithiol-2-ylidene-fluorene Units as Strong D-A Components
P. J. Skabara, I. M. Serebryakov, I. F. Perepichka, N. S. Sariciftci, H. Neugebauer, A. Cravino
Macromolecules 34 (2001), 2232-2241

27. *Photophysical Properties and Optoelectronic Device Applications of a Novel Naphthalene-vinylene Type Conjugated Polymer*

G. Zerza, B. Röthler, N.S. Sariciftci, R. Gomez, J.L. Segura, N. Martin
Journal of Physical Chemistry B Vol 105/19 (2001), 4099-4104

28. *Photoinduced electron transfer in donor/acceptor double cable polymers: Polythiophene bearing tetracyano-anthraquino-dimethane moieties*

G. Zerza, A. Cravino, H. Neugebauer, N.S. Sariciftci, R. Gómez, J.L. Segura, N. Martin, M. Svensson, M.R. Andersson
Journal of Physical Chemistry A Vol 105, Nr17 (2001), 4172-4176

29. *Sensitization of Photoconductive Polyimides for Photovoltaic Applications*

D. Mühlbacher, C. J. Brabec, N. S. Sariciftci, B. V. Kotov, V. I. Berendyaev, B. M. Romyantsev, J. C. Hummelen
Synthetic Metals 121 (2001), 1609-1610

30. Synthesis and Characterization of a Poly(1,3-dithienylisothianaphthene) Derivative for Bulk Heterojunction Photovoltaic Cells

D. L. Vangeneugden, D. J. M. Vanderzande, J. Salbeck, P. A. van Hal, R. A. J. Janssen, J. C. Hummelen, C. J. Brabec, S. E. Shaheen, N. S. Sariciftci
Journal of Physical Chemistry B Vol 105 (2001), 11106-11113

31. Influence of Disorder on the Photoinduced Excitations in Phenyl Substituted Polythiophenes

C. J. Brabec, C. Winder, M. C. Scharber, N. S. Sariciftci, J. C. Hummelen, M. Andersson
Journal of Chemical Physics Vol 115 (2001) Nr. 15, 7235-7244

32. Origin of the Open Circuit Voltage in Plastic Solar Cells

C. J. Brabec, A. Cravino, D. Meissner, N. S. Sariciftci, T. Fromherz, M. Minze, J. C. Hummelen, L. Sanchez
Advanced Functional Materials 11 (2001) No. 5, 374-380

33. Tracing photoinduced electron transfer process from a polymer chain to a fullerene moiety in real time

C. J. Brabec, G. Zerza, N. S. Sariciftci, G. Cerullo, S. DeSilvestri, S. Luzatti, J. C. Hummelen
Chemical Physics Letters 340 (2001), 232-236

34. An In Situ Spectroelectrochemical Study on the Reduction of Thin Fullerene Films

C. Kvarnström, H. Neugebauer, H. Kuzmany, H. Sitter, N. S. Sariciftci
Journal of Electroanalytical Chemistry 511 (2001) 13-19

35. Heteroepitaxial growth of organic small molecules on mica: detailed crystallographic characterisation

H. Plank, R. Resel, S. Purger, J. Keckes, A. Thierry, B. Lotz, A. Andreev, N. S. Sariciftci, H. Sitter
Physical Review B Vol 64 (2001) 235423/1-5

36. Spectroscopy on polymer-fullerene composites and photovoltaic cells

V. Dyakonov, D. Godovsky, J. Parisi, C. J. Brabec, N. S. Sariciftci, J. C. Hummelen, J. De Ceuster, E. Goovaerts
Synthetic Metals 121 (2001), 1529-1532

37. Electrochemical synthesis and redox processes of poly(paraphenylene vinylene)

An in situ FTIR-attenuated total reflectance and electrochemical quartz crystal microbalance study
P. Damlin, C. Kvarnström, H. Neugebauer, A. Ivaska
Synthetic Metals 123 (2001) 141-148

38. Tip Effects in the Scanning Tunneling Microscopy of Semiconductor Electrodes

R. Hiesgen, D. Meissner, W. Schmickler
Surface Science 479 (2001) 183-190

39. Photovoltaics of interconnected networks

D. Meissner, J. Rostalski
Synthetic Metals Vol 121 (2001) 1551-1552

40. Bericht zur Lage der Chemiewaffenkonvention (OPCW): Weltweites Abrüstungsabkommen in der (Realisierungs-) Krise

D. Meissner, A. Hädicke, R. Braun
Nachrichten aus der Chemie 49 (2001) 1416-1418

41. Temperature and Irradiance effects on the photovoltaic parameters of a fullerene/conjugated polymer solar cell

E. A. Katz, D. Faiman, Y. Cohen, F. Padinger, C. Brabec, N.S. Sariciftci
SPIE Proceedings
Vol 4108 (2001) 117-124

42. Temperature dependence for the photovoltaic device parameters of polymer-fullerene solar cells under operating conditions

E. A. Katz, D. Faiman, S. M. Tuladhar, J. M. Kroon, M. M. Wienk, T. Fromherz, F. Padinger, C. Brabec, N.S. Sariciftci
Journal of Applied Physics, Vol 90, No 10 (2001), 5343-5350

43. Electrical Admittance Studies of Polymer Photo-Voltaic Cells

V. Dyakonov, J. Meyer, J. Parisi, C. J. Brabec, N. S. Sariciftci, J. C. Hummelen
Synthetic Metals, Vol 124 (2001) 103-105

44. CuInSe₂/Polypyrrole Photovoltaic Structure Prepared by Electrodeposition

S. Bereznev, J. Kois, E. Mellikov, A. Öpik, D. Meissner
17th EPSE Conference Proceedings, James & James Ltd, London (2001)

45. Trapping Light in Organic Plastic Solar Cells with integrated Diffraction Gratings

M. Niggemann, B. Bläsi, A. Gombert, A. Hinsch, H. Hoppe, P. Lalanne, D. Meissner, V. Wittwer
17th EPSE Conference Proceedings, James & James Ltd, London (2001)

46. CIS Plastic Solar Cells

E. Arici, H. Hoppe, A. Reuning, N.S. Sariciftci, D. Meissner
17th EPSE Conference Proceedings, James & James Ltd, London (2001)

47. Photoinduced Electron Transfer in Donor/Acceptor Double Cable Polymers

A. Cravino, G. Zerza, H. Neugebauer, S. Bucella, M. Maggini, M. Svensson, M. Andersson, N.S. Sariciftci
Fullerenes for the New Millennium, Vol 11 The Electrochemical Society, Washington, DC, Spring 2001, 94 – 100

48. Photoinduced electron transfer in solid C₆₀ donor/acceptor complexes

D.V. Konarev, G. Zerza, M.C. Scharber, N.S. Sariciftci, R.N. Lyubovskaya
Synthetic Metals, Vol 121 (2001) 1127-1128

49. Polymer Fullerene Networks for Photovoltaic Applications

I. Riedel, V. Dyakonov, J. Parisi, C. Brabec, N.S. Sariciftci, J. Hummelen
17th EPSE Conference Proceedings, James & James Ltd, London (2001)

50. *Electronic Properties of Polymer-fullerene Solar Cells studied with Light-induced Electron Spin Resonance and Admittance Spectroscopy*

V. Dyakonov, I. Riedel, C. Deibel, J. Parisi, C. Brabec, N.S. Sariciftci, J. Hummelen
17th EPSE Conference Proceedings, James & James Ltd, London (2001)

51. *Low temperature recombination kinetics of photoexcited, persistent charge carriers in conjugated polymer/fullerene composite films*

N.A. Schultz, M.C. Scharber, C.J. Brabec, N.S. Sariciftci
Physical Review B Vol 64 Nr 24 (2001) 245210-1 – 7

52. *Fullerenes as Functional Moieties in Conjugated Polymers: Towards Donor-Acceptor Double Cable Polymeric Materials*

H. Neugebauer, A. Cravino, G. Zerza, M. Maggini, S. Bucella, G. Scorrano, M. Svensson, M.R. Andersson, N.S. Sariciftci
AIP Conference Proceedings 591 (2001), p 511, Electronic Properties of Molecular Monostructures

in print:

1. *Hybrid Solar Cells based on Dye-sensitized Nanoporous TiO₂ electrodes and conjugated polymers as hole transport materials*

D. Gebeyehu, C. Brabec, N.S. Sariciftci, D. Vangeneugden, R. Kiebooms, D. Vanderzande, F. Kienberger, H. Schindler
Synthetic Metals, Vol 125 (2002) 279-287

2. *Electrochemical and Photophysical Properties of a Novel Polythiophene with Pendant Fulleropyrrolidine Moieties : Towards “Double Cable” Polymers for optoelectronic Devices*

A. Cravino, G. Zerza, H. Neugebauer, M. Maggini, S. Bucella, E. Menna, M. Svensson, M.R. Andersson, C.J. Brabec, N.S. Sariciftci
Journal of Physical Chemistry B Vol 106 (2002), 70-76

3. *Infrared spectroscopic investigations of organic polymeric photovoltaic systems*

H. Neugebauer, C. J. Brabec, A. Cravino, Y. Teketel, P. Denk, S. Luzzati, M. Catellani, N. S. Sariciftci
SPIE proceedings

4. *Structural relationship between epitaxial grown para-sexiphenyl and mica (001) substrates*

H. Plank, R. Resel, A. Andreev, N.S. Sariciftci, H. Sitter
Journal of Crystal Growth

5. *Self-Assembled Growth of Highly Oriented Para-Sexiphenyl Thin Films Controlled by Elastic Strain*

A. Andreev, H. Sitter, C.J. Brabec, P. Hinterdorfer, G. Springholz, N.S. Sariciftci, R. Resel, H. Plank
MRS 2001 Spring Meeting Proceedings

6. Highly ordered Anisotropic nano-needles in Para-Sexiphenyl films

A. Andreev, H. Sitter, N.S. Sariciftci, C.J. Brabec, G. Springholz, P. Hinterdorfer, H. Plank, R. Resel, A. Thierra, B. Lotz
Thin Solid Films Vol 403-404 (2002) 444-448

7. The influence of Materials work function on the open Circuit Voltage of Plastic Solar Cells

C.J. Brabec, A. Cravino, D. Meissner, N.S. Sariciftci, M.T. Rispens, L. Sanchez, J.C. Hummelen, T. Fromherz
Thin Solid Films 403-404 (2002) 368-372

8. Sensitization of Low Bandgap Polymer bulk heterojunction Solar Cells

C. Winder, G. Matt, J.C. Hummelen, R.A.J. Janssen, N.S. Sariciftci, C.J. Brabec
Thin Solid Films, Vol 403-404 (2002) 373-379, E-MRS Strassbourg 2001

9. A comparison between state-of-the-art 'gilch' and 'sulphinyl' synthesised MDMO-PPV / PCBM bulk hetero-junction solar cells

T. Munters, T. Martens, L. Goris, V. Vrindts, J. Manca, L. Lutsen, W. De Ceuninck, D. Vanderzande, L. De Schepper, J. Gelan, N. Sariciftci, C. Brabec
Thin Solid Films, Vol 403-404 (2002) 247-251

10. Synthesis and electropolymerisation of 3', 4'-Bis(alkylsulfanyl)terthiophenes and the significance of the fused dithiin ring in 2,5-Dithienyl-3,4-ethylenedithiophene (DT-EDTT)

C. Pozo-Gonzalo, T. Khan, J.J.W. McDouall, P.J. Skabara, D.M. Roberts, M.E. Light, S.J. Coles, M.B. Hursthouse, H. Neugebauer, A. Cravino, N.S. Sariciftci
Journal of Materials Chemistry

11. Photoinduced electron Transfer from a Dithieno Thiophene-based Polymer to TiO₂

S. Luzzati, M. Basso, M. Catellani, D. Gebeyehu, N.S. Sariciftci, C.J. Brabec
Thin Solid Films 403-404 (2002) 52-56, E-MRS Strassbourg 2001

12. Solid-State organic/inorganic Hybrid Solar Cells based on conjugated Polymers and Dye-sensitized TiO₂ Electrodes

D. Gebeyehu, C.J. Brabec, N.S. Sariciftci
Thin Solid Films 403-404 (2002) 271-274

13. Effect of LiF/metal electrodes on the performance of plastic solar cells

C. Brabec, S. Shaheen, C. Winder, P. Denk, N.S. Sariciftci
Applied Physics Letters Vol 80, (2002)

14. Positive and Negative Charge Carriers in Doped or Photoexcited Polydithienothiophenes: a Comparative Study Using Raman, Infrared and Electron Spin Resonance Spectroscopy

A. Cravino, H. Neugebauer, S. Luzzati, M. Catellani, A. Petr, L. Dunsch, N.S. Sariciftci
Journal of Physical Chemistry B

submitted:

1. Morphology Dependent Photoexcitation Mechanism in Substituted Polythiophenes Studied by Magnetic Resonance

M. C. Scharber, N. Schultz, Christoph J. Brabec, Mats Andersson, N. Serdar Sariciftci
Physical Review B

2. Effects of Inserting Highly Polar Salts between the Cathode and Active Layer of Bulk Heterojunction Photovoltaic devices

S.E. Shaheen, C.J. Brabec, N.S. Sariciftci, G.E. Jabbour

3. Dependence of field-effect hole mobility of PPV-based polymer films on the spin-casting solvent

W. Geens, J. Poortmans, S. Shaheen, C. Brabec, N.S. Sariciftci, B. Wessling
Journal of Applied Physics

4. Dual Function of a Low-Bandgap Semiconducting Polymer: Photoactive Devices and Infrared Emitting Diodes

C. Brabec, C. Winder, N.S. Sariciftci, J. Hummelen, A. Dhanabalan, P. van Hal, R. Janssen
Journal of Applied Physics

Patente:

1. Photovoltaische Zelle I

Sariciftci et al

Österreichische Patenanmeldung 15 A 733 /2000, PCT/AT 01 128/2001, pending

2. Photovoltaische Zelle II

Sariciftci et al

Österreichische Patenanmeldung 15 A 734 /2000, PCT/AT 01 129/2001, pending

3. Photovoltaische Zelle III

Sariciftci et al

Österreichische Patenanmeldung 15 A 735 /2000, PCT/AT 01 130/2001, pending

4. Photovoltaische Zelle IV

Sariciftci et al

Österreichische Patenanmeldung 15 A 1231/2001, pending

5. Kohlenstoffhaltige Schichten, Verfahren zu ihrer Herstellung und ihre Verwendung

Anatoly I. Kulak, Alexander I. Kokorin, E. V. Shevschenko, Dieter Meissner
Deutsche Patentanmeldung DE 100 11 316.8 and DE 100 13 323.1, 11. 3. 2000,
pending

6. Schaum, Verfahren zur Herstellung und Verwendung von Schaum

Anatoly I. Kulak, D. G. Shchukin, D. V. Sviridov, Dieter Meissner

Deutsche Patentanmeldung DE 100 11 314.1 and DE 100 13 237.5, 11. 3. 2000, pending

7. Monokornmembranmaske

Dieter Meissner, Niklas Zaitzev, Enn Mellikov, Mare Altosaar, Tiit Varema
DE 199 14 810 (Forschungszentrum Jülich), PCT-Application 23. 2. 2000, pending

8. Method and Device for Testing the Quality of a Sheet-Like Element Comprising a Membrane

Dieter Meissner, Herrmann Kabs
US 6,224,746 B1, May 1, 2001

9. "Solarzelle mit gestapelten Molekülen, Verfahren zu deren Herstellung und zu deren Betrieb"

Klaus Kohrs, Dieter Meissner
Deutsche Patentanmeldung (Forschungszentrum Jülich) 14. August 1998
DE 198 37 019.9-33, erteilt 24. Mai 2001

10. "Verfahren zur Regelung der Brennstoffkonzentration in einem Alkohol oder Ether als Brennstoff und Wasser enthaltenden Brennstoffgemisch einer Brennstoffzelle und Brennstoffzellensystem"

Dieter Meissner, Hans-Friedrich Oetjen, Jürgen Mergel
Deutsche Patentanmeldung (Forschungszentrum Jülich) 3. November 1998
DE 198 50 720.8-45, erteilt 22.. Juni 2001