PERSONAL INFORMATION

EAMONN JAMES DEVLIN

I-11, Institute of Nanoscience and Nanotechnology, NCSR DEMOKRITOS,

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Positions held

2019- Today: Permanent Magnets, Magnetic Recording and Thermoelectrics research group leader.

2014 – TODAY: Research Director at the Institute of Nanoscience and Nanotechnology, NCSR DEMOKRITOS. Head of Mössbauer spectroscopy laboratory

2009 – 2013: Senior Researcher at the Institute of Materials Science at NCSR DEMOKRITOS

2005 - 2008: Researcher at the Institute of Materials Science at NCSR DEMOKRITOS.

1991 – 2005: Post-Doctoral Researcher at the Institute of Materials Science at NCSR DEMOKRITOS in the Mössbauer Spectroscopy Laboratory.

1985 – 1990: Research Fellow/Associate at the Dept. of Metallurgy and Materials at the University of Birmingham, UK.

EDUCATION

1991: Ph.D., Dept. of Metallurgy and Materials, University of Birmingham, UK. Dissertation title “An Investigation into the Structure and Magnetic Properties of some Transition Metal – Metalloid Alloys.”

1985: M.Sc. from the Dept of Experimental Physics, Trinity College Dublin, Ireland. Dissertation title “The Effects of Hydrogen on some Amorphous Rare Earth – Transition Metal Alloys”.

1982: B.Sc. from the Dept of Experimental Physics, Trinity College Dublin, Ireland.

PUBLICATIONS

103 publications in refereed journals, >2000 citations, h-index= 25.

RESEARCH AREAS

Hard magnetic materials, behaviour of magnetic nanoparticles, thin films and multilayers. Mössbauer spectroscopy. Magnetic phenomena and applications. The investigation of the dynamic and static magnetic properties of materials using Mössbauer Spectroscopy in combination with magnetic measurements (Vibrating Sample Magnetometry, SQUID magnetometry) can give a wide range of useful information on materials with applications in magnetic recording, permanent magnets, minerals processing, catalysis, gas processing, and pharmaceuticals. Information on valence, local crystal environment, phase content, magnetic state provides important data for the characterization of materials at the atomic scale. The fast characteristic timescale of Mössbauer Spectroscopy (10-9s) also allows the study of dynamic effects at timescales unavailable to magnetic characterisation techniques. This is particularly valuable in the study of magnetic nanoparticles and thin films with applications in magnetic recording where the requirement to minimize the magnetic domain size (to maximise recording density) leads to magnetic instability. Characterisation of the dynamic magnetic properties of nanoparticles is also of interest in the development of materials for magnetic hyperthermia treatment of cancer.

PUBLICATIONS

Vasilakaki, M., Gemenetzi, F., Devlin, E., Yi, D.K., Riduan, S.N., Lee, S.S., Ying, J.Y., Papaefthymiou, G.C., Trohidou, K.N.

Size effects on the magnetic behavior of γ-Fe2O3 core/SiO2 shell nanoparticle assemblies

(2021) Journal of Magnetism and Magnetic Materials, 522, art. no. 167570.

Zirhli, O., Gunduz Akdogan, N., Odeh, Y.N., Misirlioglu, I.B., Devlin, E., Akdogan, O.

Fabrication and Characterization of Fe16N2 Micro-Flake Powders and Their Extrusion-Based 3D Printing into Permanent Magnet Form

(2020) Advanced Engineering Materials, 22 (11), art. no. 2000311.

Khurshid, H., Abdu, Y.A., Devlin, E., Issa, B.A., Hadjipanayis, G.C.

Chemically synthesized nanoparticles of iron and iron-carbides

(2020) RSC Advances, 10 (48), pp. 28958-28964.

Ibrahim, I., Kaltzoglou, A., Athanasekou, C., Katsaros, F., Devlin, E., Kontos, A.G., Ioannidis, N., Perraki, M., Tsakiridis, P., Sygellou, L., Antoniadou, M., Falaras, P.

Magnetically separable TiO2/CoFe2O4/Ag nanocomposites for the photocatalytic reduction of hexavalent chromium pollutant under UV and artificial solar light

(2020) Chemical Engineering Journal, 381, art. no. 122730, .

Varouti, E., Devlin, E., Sanakis, Y., Pissas, M., Christides, C., Tomara, G.N., Karahaliou, P.K., Georga, S.N., Krontiras, C.A.

A systematic Mössbauer spectroscopy study of Y3Fe5O12 samples displaying different magnetic ac-susceptibility and electric permittivity spectra

(2020) Journal of Magnetism and Magnetic Materials, 495, art. no. 165881, .

Ibrahim, I., Athanasekou, C., Manolis, G., Kaltzoglou, A., Nasikas, N.K., Katsaros, F., Devlin, E., Kontos, A.G., Falaras, P.

Photocatalysis as an advanced reduction process (ARP): The reduction of 4-nitrophenol using titania nanotubes-ferrite nanocomposites

(2019) Journal of Hazardous Materials, 372, pp. 37-44.

Abel, F.M., Tzitzios, V., Devlin, E., Alhassan, S., Sellmyer, D.J., Hadjipanayis, G.C.

Enhancing the Ordering and Coercivity of L10 FePt Nanostructures with Bismuth Additives for Applications Ranging from Permanent Magnets to Catalysts

(2019) ACS Applied Nano Materials, 2 (5), pp. 3146-3153.

Adarsh, N.N., Dîrtu, M.M., Guionneau, P., Devlin, E., Sanakis, Y., Howard, J.A.K., Chattopadhyay, B., Garcia, Y.

One-Dimensional Looped Chain and Two-Dimensional Square Grid Coordination Polymers: Encapsulation of Bis(1,2,4-Triazole)-trans-cyclohexane into the Voids

(2019) European Journal of Inorganic Chemistry, 2019 (5), p. 543.

Adarsh, N.N., Dîrtu, M.M., Guionneau, P., Devlin, E., Sanakis, Y., Howard, J.A.K., Chattopadhyay, B., Garcia, Y.

One-Dimensional Looped Chain and Two-Dimensional Square Grid Coordination Polymers: Encapsulation of Bis(1,2,4-Triazole)-trans-cyclohexane into the Voids

(2019) European Journal of Inorganic Chemistry, 2019 (5), pp. 585-591.

Favvas, E.P., Heliopoulos, N.S., Karousos, D.S., Devlin, E., Papageorgiou, S.K., Petridis, D., Karanikolos, G.N.

Mixed matrix polymeric and carbon hollow fiber membranes with magnetic iron-based nanoparticles and their application in gas mixture separation

(2019) Materials Chemistry and Physics, 223, pp. 220-229.

Abel, F.M., Pourmiri, S., Basina, G., Tzitzios, V., Devlin, E., Hadjipanayis, G.C.

Iron carbide nanoplatelets: Colloidal synthesis and characterization

(2019) Nanoscale Advances, 1 (11), pp. 4476-4480.