

References

- Anderson, C. *Makers: The New Industrial Revolution*. New York: Crown, 2012. ISBN 978-0307720962.
- Ashby, M. & Johnson, K. The Art of Materials Selection. *Materials Today* 6 (2003): 24–35. [https://doi.org/10.1016/S1369-7021\(03\)01223-9](https://doi.org/10.1016/S1369-7021(03)01223-9)
- Ashby, M. F. *Materials and Sustainable Development*. Oxford: Butterworth-Heinemann, 2016. <https://doi.org/10.1016/B978-0-08-100176-9.01001-X>
- Ayala Garcia, C. & Rognoli, V. The New Aesthetic of DIY-Materials. *Design Journal* 20 (2017): 375–389. <https://doi.org/10.1080/014606925.2017.1352905>
- Ayala Garcia, C. & Rognoli, V. Material Activism: New Hybrid Scenarios Between Design and Technology. *Cuadernos Del Centro de Estudios de Diseño y Comunicación* 19 (2018). <https://doi.org/10.18682/cdc.vi70.1143>
- Barry, A., Born, G. & Wieszkalnys, G. Logics of Interdisciplinarity. *Economy and Society* 37, no. 1 (2008): 20–49. https://www.researchgate.net/publication/276942262_Logics_of_interdisciplinarity
- Bendix, R. F., Bizer, K. & Noyes, D. *Sustaining Interdisciplinary Collaboration: A Guide for the Academy*. Urbana: University of Illinois Press, 2017. ISBN 978-0-252-08237-5.
- Blomsma, F. & Tennant, M. Circular Economy: Preserving Materials or Products? Introducing the Resource States Framework. *Resources, Conservation and Recycling* 156 (2020): 104698. <https://doi.org/10.1016/j.resconrec.2020.104698>
- Branzi, A. *Introduzione Al Design Italiano: Una Modernità Incompleta*. Milan: Baldini + Castoldi, 2015. ISBN 978-8868521370.
- Breathe In / Breathe Out. *Vienna Biennale – Kunst, Design und Architektur für eine bessere Zukunft* [online]. MAK Blog, September 1, 2021. Accessed June 23, 2025. <https://blog.mak.at/vienna-biennale-2/>.
- Capra, F., & Luisi, P. L., eds. The Mechanistic View of Life. In *The Systems View of Life: A Unifying Vision*, 35–44. Cambridge: Cambridge University Press, 2014. <https://doi.org/10.1017/CBO9780511895555.005>
- Castelli, C. T. & Mitchell, C. T. Clino Trini Castelli: Design Primario. *AIS/Design. Storia e Ricerche* 2, no. 4 (2014): Article 4.
- Ceschin, F. & Gaziulusoy, I. *Design for Sustainability: A Multi-Level Framework from Products to Socio-Technical Systems*. New York: Routledge, 2019. <https://doi.org/10.4324/9780429456510>
- Castro-Alonso, M. J., Montañez-Hernandez, L. E., Sanchez-Muñoz, M. A., Macias Franco, M. R., Narayanasamy, R. & Balagurusamy, N. Microbially Induced Calcium Carbonate Precipitation (MICP) and Its Potential in Bioconcrete: Microbiological and Molecular Concepts. *Frontiers in Materials* 6 (2019): 126. <https://doi.org/10.3389/fmats.2019.00126>
- Ceppi, G. Il Design Dei Materiali in Italia. *AIS/Design. Storia e Ricerche* 2, no. 4 (2014): Article 4.
- Clèries, L., Rognoli, V., Solanki, S. & Llorach, P., eds. *Material Designers: Boosting Talent Towards Circular Economies*. Elisava; Politecnico di Milano; Matter, 2021. <https://research.elisava.net/material-designers-book>
- Crafting Plastics! Studio*. About. 2025. <https://craftingplastics.com/>
- Crafting Plastics! Studio's Sensbiom Installation Changes Colour in Response to UV Light at Milan Design Week. *Dezeen*. April 18, 2023. <https://www.dezeen.com/2023/04/18/crafting-plastics-studio-sensbiom-installation-milan-design-week/>
- De Giorgi, C., Lerma, B. & Dal Palù, D. *The Materials Side of Design: The Future Material Design Cultures*. Politecnico di Torino, 2020.
- Duarte Poblete, S. S., Anselmi, L. & Rognoli, V. Emerging Materials Fostering Interdisciplinary Collaboration in Materials Design. In *Interdisciplinary Practice in Industrial Design*, edited by Y.-G. Ghim & C. S. Shin. AHFE Open Access Series,

vol. 100. AHFE International, 2023. <https://doi.org/10.54941/ahfe1002978>

Duarte Poblete, S. S., Anselmi, L. & Rognoli, V. Materials Designers and the Translational Approach: A Case from a Product Design Company. *DRS2024 Conference Proceedings*, edited by C. Gray et al., Design Research Society, 2024. <https://doi.org/10.21606/drs.2024.1080>

Duarte Poblete, S. S., Romani, A. & Rognoli, V. Emerging Materials for Transition: A Taxonomy Proposal from a Design Perspective. *Sustainable Futures* 7 (2024): 100155. <https://doi.org/10.1016/j.sftr.2024.100155>

Fernández, D. *Temporary Materials*. Universidad Católica de Temuco, 2023.

Fuller, R. B. *Operating Manual for Spaceship Earth*. New York: E. P. Dutton & Co., 1963. ISBN 978-0525474143.

García, J., & López, M. *Impact of the Closure of the Boyeco Landfill on Waste Management in La Araucanía*. Universidad de La Frontera, 2018.

Giaccardi, E. & Karana, E. Foundations of Materials Experience: An Approach for HCI. In *Proceedings of the 33rd SIGCHI Conference on Human Factors in Computing Systems*.

Gibbons, L. V. Regenerative – The New Sustainable? *Sustainability* 12, no. 13 (2020): Article 13. <https://doi.org/10.3390/su12135483>

Gombošová, Zuzana. Interview by Valentýna Landa Filipková. Interdisciplinary Experience and the Path to Environmentally Responsible Material: Interview with the Founder of Malai. *Conscious Design.cz*, 2022. <https://consciousdesign.cz/Zuzana-Gombosova-Interdisciplinary-experience-and-the-path-to>

Guédez, C., Cañizalez, L., Castillo, C., Olivar, R., & Maffei, M. *Alternatives for the Control of Post-Harvest Fungi in Valencia Oranges (Citrus sinensis)*. Accessed August 1, 2025. https://ve.scielo.org/scielo.php?script=sci_arttext&pid=S1315-25562010000100009

Hornbuckle, R. Mobilising Materials Knowledge: Exploring the Role of Samples for Supporting Multidisciplinary

Collaborative Design for Materials Development. *The Design Journal* 23, no. 2 (2020): 277–297. <https://doi.org/10.1080/14606925.2020.1849963>

Holden, N. M., Neill, A. M., Stout, J. C., O'Brien, D. & Morris, M. A. Biocircularity: A Framework to Define Sustainable, Circular Bioeconomy. *Circular Economy and Sustainability* 3, no. 1 (2023): 77–91. <https://doi.org/10.1007/s43615-022-00180-y>

Jang, W. D., Hwang, J. H., Kim, H. U., Ryu, J. Y. & Lee, S. Y. Bacterial Cellulose as an Example Product for Sustainable Production and Consumption. *Microbial Biotechnology* 10, no. 5 (2017): 1181–1185. <https://doi.org/10.1111/1751-7915.12744>

Karana, E. *Meanings of Materials*. Ph.D. thesis, Delft University of Technology, 2009. <https://repository.tudelft.nl/islandora/object/uuid%3A092da92d-437c-47b7-a2f1-b49c93cf2b1e>

Karana, E., Barati, B. & Rognoli, V. Material Driven Design (MDD): A Method to Design for Material Experiences. *International Journal of Design* 9, no. 2 (2015): 35–54. <http://www.ijdesign.org/index.php/IJDesign/article/view/1986>

Karana, E., Hekkert, P. & Kandachar, P. A Tool for Meaning-Driven Materials Selection. *Materials & Design* 31, no. 6 (2010): 2932–2941. <https://doi.org/10.1016/j.matdes.2009.12.021>

Karana, E., Hekkert, P. & Kandachar, P. Materials Experience: Descriptive Categories in Material Appraisals. In *Proceedings of TMCE 2008 Symposium*.

Karana, E., McQuillan, H., Rognoli, V., & Giaccardi, E. Living Artefacts: Artefacts for Regenerative Ecologies. *Research Directions: Biotechnology Design* 1 (2023): e16. <https://doi.org/10.1017/btd.2023.10>

Kääriäinen, P., Tervinen, L., Vuorinen, T., & Riutta, N., eds. *The CHEMARTS Cookbook*. Aalto University Publication Series C 1/2020. Espoo: Aalto University, 2020. <https://urn.fi/URN:ISBN:978-952-60-8803-7>

Keije, T., Bakker, V., & Sloopweg, J. C. Circular Chemistry to Enable a Circular Economy. *Nature Chemistry* 11, no. 3 (2019): Article 3. <https://doi.org/10.1038/s41557-019-0226-9>

Keune, S., Mody, A., & Westerlaken, M. Between Breakfast and Bed: Towards Fluid Modes of Designing and Cohabiting with Living Organisms. In *Structures and Architecture: A Viable Urban Perspective?* Boca Raton: CRC Press, 2022.

Kubušová, V., Ho, G., & Mogas-Soldevila, L. Multiscale Design: A Framework for Transdisciplinary Collaboration in Sustainable Material Development. *Frontiers in Bioengineering and Biotechnology* 11 (2023): 1125156. <https://doi.org/10.3389/fbioe.2023.1125156>

Langella, C. Chapter 10 – Design and Science: A Pathway for Material Design. In *Materials Experience* 2, edited by O. Pedgley, V. Rognoli & E. Karana, pp. 259–277. Butterworth-Heinemann, 2021. <https://doi.org/10.1016/B978-0-12-819244-3.00001-6>

Latour, B. *Reassembling the Social: An Introduction to Actor-Network – Theory*. Oxford: Oxford University Press, 2005

Lee, J. *Material Alchemy*. Mumbai: BIS Publishers, 2015. ISBN 978-9381261152.

Lexus. *Lexus to Unveil Liminal Cycles*. DiscoverLexus, December 14, 2024. Accessed August 1, 2025. <https://discoverlexus.com/stories/lexus-to-unveil-liminal-cycles/>

Lipkova, Michala. *Senseable Biomaterials: Design-Driven Innovations in Biomaterials by Vlasta Kubušová*. 2023. https://www.researchgate.net/publication/375592752_Senseable_Biomaterials_Design-driven_innovations_in_biomaterials_by_Vlasta_Kubusova

Lucibello, S. & Montalti M. Beyond human – New Paradigms of Active Collaboration in Design. *DIID. Disegno Industriale Industrial Design* 72 (2019): 26–34. ISSN 1594-8528.

Mang, P., & Reed, B. Designing from Place: A Regenerative Framework and Methodology. *Building Research & Information* 40, no. 1 (2012): 23–38. <https://doi.org/10.1080/09613218.2012.621341>

Mang, P., Haggard, B., & Regenes. *Regenerative Development and Design: A Framework for Evolving Sustainability*.

Hoboken, NJ: John Wiley & Sons, 2016. ISBN 978-1118898930

Manzini, E. *La Materia Dell'Invenzione: Materiali e Progetto*. Rome: Arcadia Edizioni, 1986. ISBN 978-8885684164.

Marques, E. *Circular Economy and Sustainability*. Cambridge: Cambridge University Press, 2023.

Mansilla, V. B. & Gardner, H. Assessing Interdisciplinary Work at the Frontier: An Empirical Exploration of 'Symptoms of Quality'. *Interdisciplines* (2007). <http://www.interdisciplines.org/interdisciplinarity/papers/6>

Materiom. *Open Source Recipes for Materials Made from Locally Abundant Biomass*. Web platform. Accessed June 23, 2025. <https://www.materiom.org>

Meadows, D., D. L. Meadows, J. Randers & W. W. Behrens. *The Limits to Growth*. New York: Universe Books, 1972. ISBN 978-0876631652.

Mershin, Andreas. *This is a Synthetic Tree That Makes Energy*. YouTube video, 7:20. Posted by TED, July 2024. <https://www.youtube.com/watch?v=GnvRku9VwKM>

Meyer, V. et al. Growing a Circular Economy with Fungal Biotechnology:

A White Paper. *Fungal Biology and Biotechnology* 7, no. 1 (2020): 5. <https://doi.org/10.1186/s40694-020-00095-z>

McDonough, W. & Braungart, M. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2003. ISBN 978-0865475877

Morais, E. et al. Microalgal Systems for Wastewater Treatment: Technological Trends and Challenges towards Waste Recovery. *Energies* 14 (2021): 8112. <https://doi.org/10.3390/en14238112>

Myers, W. *Bio Design: Nature, Science, Creativity*. New York: MoMA and Thames & Hudson, 2012. ISBN 978-0500517057

ODEPA. *Potato Bulletin*. Ministerio de Agricultura, 2021. Accessed August 1, 2025. <https://bibliotecadigital.odepa.gob.cl/bitstream/handle/20.500.12650/70624/Bpapa0121.pdf>

ODEPA. *Weekly Bulletin of Prices and Volumes of Fruits and Vegetables in Wholesale Markets Nationwide*. Ministerio de Agricultura, 2022.

Papanek, V. *Design for the Real World: Human Ecology and Social Change*. New York: Pantheon Books, 1971. ISBN 978-0394726592.

Parisi, S., Rognoli, V. & Sonneveld, M. Material Tinkering: An Inspirational Approach for Experiential Learning and Envisioning in Product Design Education. *The Design Journal* 20, sup 1 (2017): S1167–S1184. <https://doi.org/10.1080/14606925.2017.1353059>

Pedgley, O., Rognoli, V. & Karana, E. *Materials Experience 2: Expanding Territories of Materials and Design*. Boston: Butterworth-Heinemann/Elsevier, 2021. ISBN 978-0-12-819244-3.

Pérez, S. *Chemical Characterization of Citrus Waste for Industrial Applications*. Universidad de Chile, 2019.

Perry, E., Weber, J., Elfick, A., Corbett, P. K., & Church, G. M. How to Grow (Almost) Anything: A Hybrid Distance Learning Model for Global Laboratory-Based Synthetic Biology Education. *Nature Biotechnology* (2022): 1–6. <https://doi.org/10.1038/s41587-022-01601-x>

Politecnico di Milano (Director). *Incontro con Clino Trini Castelli: Le idee e la materia* [Video]. YouTube, October 14, 2014. <https://www.youtube.com/watch?v=IY2rUIAFD3A>

Pollini, B. From Biodesigners to Designers in Lab: Testing the Nuances of an Emerging Profession through Autoethnography. *Research Directions: Biotechnology Design 2* (2024): e20. <https://doi.org/10.1017/btd.2024.11>

Pollini, B. & Rognoli, V. Early-Stage Material Selection Based on Life Cycle Approach: Tools, Obstacles and Opportunities for Design. *Sustainable Production and Consumption* 28 (2021): 1130–1139. <https://doi.org/10.1016/j.spc.2021.07.014>

Pollini, B. & Rognoli, V. Healing Materialities: Framing Biodesign's Potential for Conventional and Regenerative Sustainability. *Research Directions: Biotechnology Design 2* (2024): e21. <https://doi.org/10.1017/btd.2024.14>

Reali, L., Sampietro, G., Diani, M., Celli, T., Cantini, F., Marseglia, M. & Biondi, N. Exploitation of Microalgae Biomineralization to Produce Biomaterials from Marble Extraction Leftovers. *Elettronico* (2024): 30. (Conference abstract, ISAP 2024, Porto, 16–21 June 2024)

Ricchetti, M. *Neomateriali Nell'Economia Circolare. Moda. Ediz. a Colori*. Milan: Edizioni Ambiente, 2017. ISBN 978-8866206647

Ribul, M. *Recipes for Material Activism*. Self-published, 2014. https://issuu.com/miriamribul/docs/miriam_ribul_recipes_for_material_a

Rognoli, V. A Broad Survey on Expressive-Sensorial Characterization of Materials for Design Education. *METU Journal of the Faculty of Architecture* 27 (2010): 16. <https://doi.org/10.4305/METU.JFA.2010.2.16>

Rognoli, V. & Levi, M. *Emotions in Design through Materials: An Expressive-Sensorial Atlas as a Project Tool for Design of Materials*. Politecnico di Milano, 2004. <https://re.public.polimi.it/handle/11311/561956>

Rognoli, V. & Levi, M. *Materiali Per Il Design: Espressività E Sensorialità*. Milano: Polipress, 2005. ISBN 978-8873980124.

Rognoli, V. *The Expressive-Sensorial Characterization of Materials for Design*. Unpublished Ph.D. thesis, Politecnico di Milano, 2004.

Rognoli, V., Bianchini, M., Maffei, S. & Karana, E. DIY Materials. *Materials & Design* 86 (2015): 692–702. <https://doi.org/10.1016/j.matdes.2015.07.020>

Roschelle, J. & Teasley, S. The Construction of Shared Knowledge in Collaborative Problem Solving. In *Computer Supported Collaborative Learning*, edited by C. O'Malley. Heidelberg: Springer-Verlag, 1995. https://www.researchgate.net/publication/243778765_The_Construction_of_Shared_Knowledge_in_Collaborative_Problem_Solving

Rosén, A. P., Salovaara, A., Botero, A., & Søndergaard, M. L. J., eds. *More-Than-Human Design in Practice*. New

York: Routledge, 2024. <https://doi.org/10.4324/9781003467731>

Schandl, H. et al. Global Material Flows and Resource Productivity: The 2024 Update. *Journal of Industrial Ecology* 28, no. 6 (2024): 2012–2031. <https://doi.org/10.1111/jiec.13593>

Solanki, S. *Why Materials Matter: Responsible Design for a Better World*. Munich: Prestel Verlag, 2018. ISBN 978-3-7913-8471-9.

Stegmann, P., Londo, M. & Junginger, M. *The Circular Bioeconomy: Its Elements*

and Role in European Bioeconomy Clusters. *Resources, Conservation & Recycling: X* 6 (2020): 100029. <https://doi.org/10.1016/j.rcrx.2019.100029>

Vezzoli, C. *Design for Environmental Sustainability: Life Cycle Design of Products*. Second Edition. London: Springer, 2018. <https://doi.org/10.1007/978-1-4471-7364-9>

Zuo, H., Hope, T., Jones, M. & Castle, P. *Sensory Interaction with Materials*. Southampton Institute, 2003. <https://doi.org/10.1201/9780203608173-c41>